

# American Artisan

THE WARM AIR HEATING  
AND SHEET METAL JOURNAL  
FOUNDED 1880

## YOUR PROFITS DEPEND ON QUALITY

RECALL some of the installations you've made—haven't the quality jobs on which you used a high grade heater been the most profitable and the easiest to sell? Today more than ever before better profits can be had only with better quality.

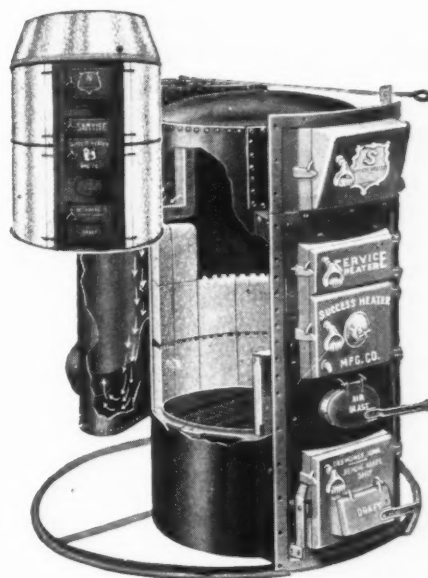
This means that now is an excellent time for you to concentrate on the better jobs.

Success Heaters are made for high grade installations. Every talking point you advance for better, more comfortable, cleaner and healthier heating is backed up by Success Heaters.



—and your  
sales on  
your method  
of selling—

WE advertise better warm air heating direct to prospects in your territory with the most practical and powerful consumer sales plan ever put in use to sell the public on quality warm air heating with a quality warm air heater. This advertising is consistent and result getting. It is a selling method that sends prospective buyers direct to you. Write for a copy of the Big Success Idea. Look over this sales plan now.



SUCCESS HEATER MFG. CO.  
DES MOINES, IOWA



# SUCCESS HEATERS



MAY 10, 1930

# RUDY

*Air  
Conditioning*

## SYSTEMS

*meet the demand of*

# The Modern Trend in Heating and Ventilating

*Not a new name for an old product—but a new heating system designed by Rudy Engineers, tested in Rudy laboratories, perfected, beautified and now offered to the public as a real air conditioning unit.*

ITS foundation is the famous line of sturdy, efficient Rudy Top Radiator furnaces, made of Charcoal Iron. A special system of baffling has been arranged which produces a uniform flow of air through the entire area of the casing. The equipment has been selected because of its special adaptation to the requirements of this unit and to give complete co-ordination for maximum efficiency.

The positive circulator is the blower type which definitely circulates the required volume of air. It is driven by a quiet motor and automatically controlled by a furnacestat. Humidity is provided by a generous water pan which is automatically kept filled.

Drafts are thermostatically regulated to save fuel and provide uniform temperature. Air filters remove the dust and bacteria.

### A Complete Series of Air Conditioning Units

Standardized for installation in the better class homes. Merchandised through dealers desirous of presenting a modern product. Backed up by sales and advertising helps, engineering service, and a company owned finance plan.

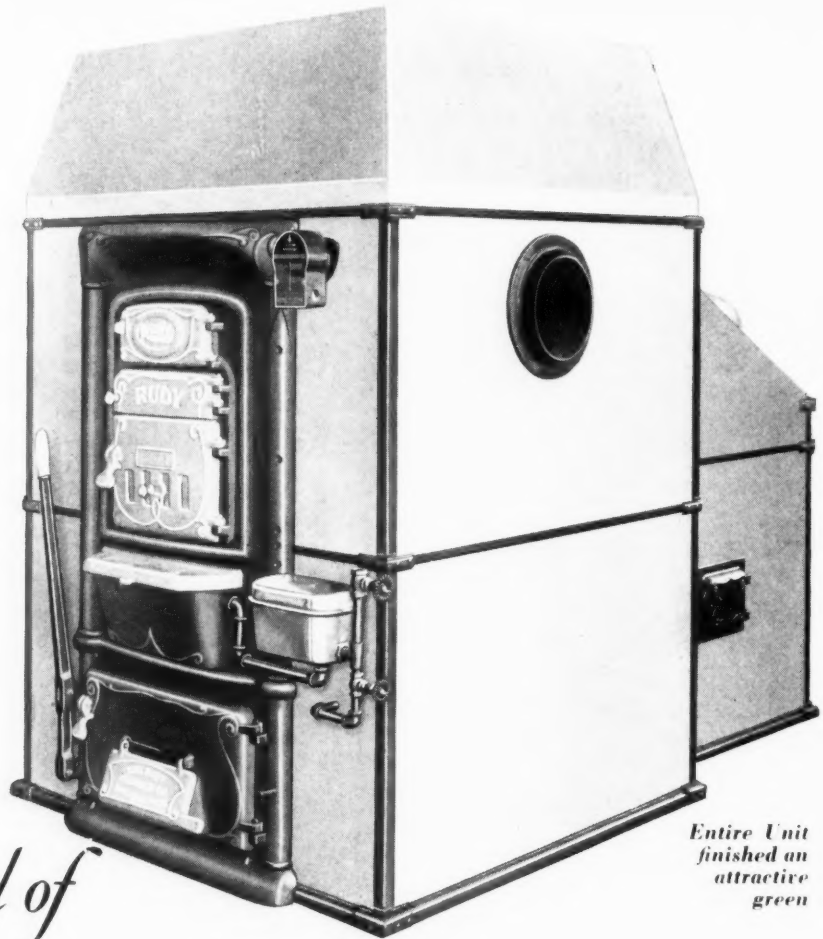
### Rudy Air Conditioning Units Assure

Heating for Winter—Cooling for Summer—Removal of dust and bacteria by efficient air cleaning apparatus—Controlled humidity—Air delivered under positive pressure—Complete thermostatic control.

*A Discriminating Public Demands Greater Heating Service*

*Your inquiry will bring you details*

**The RUDY FURNACE COMPANY**  
DOWAGIAC, MICHIGAN



*Entire Unit  
finished an  
attractive  
green*





1930

Unit  
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# SELL THE EL CAPITAN AND YOU SELL "CLEANER HEAT"

**T**HE EL CAPITAN is one of the *Midland Cleaner Heat Series*.

Heavy steel—riveted and calked—and embodying all the advancements and improvements for satisfactory, easy and cleaner operation.

The EL CAPITAN is one of Midland's Cleaner Heat Series. When you sell this furnace, you sell "*Cleaner Heat*."

We invite you to investigate this furnace and the sales plans which back it.



**MIDLAND FURNACE CO.**  
COLUMBUS OHIO



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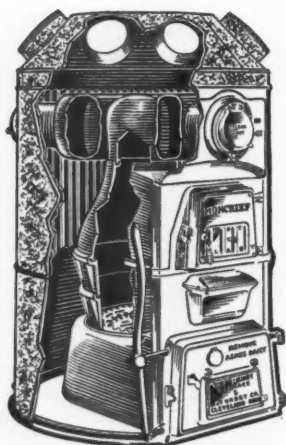
BUYERS' DIRECTORY—52 and 54

## Moncrief Steel Furnaces



# Features

## that Convince



THE SERIES "C"



Extra heavy one-piece radiator



Hot Blast Feed Door



Feed Section, extra large and heavy. Opening extends clear through the front



Large roomy ash pit, all one piece, seamless

THE high merit of Moncrief Furnaces is easily demonstrated. One-piece construction, extra large radiator, duplex roller-bearing grate—these and many other features of the Series "C" are quick sales closers.

Of equally high quality and advanced construction is the new Moncrief Steel Furnace. The shell is of  $\frac{1}{4}$  inch copper-bearing steel, both riveted and welded—the heaviest steel furnace made. It is equipped with the regular Moncrief duplex roller-bearing grate.

*Send for particulars of these two outstanding furnaces*

**THE HENRY FURNACE & FOUNDRY CO.**  
3471 E. 49th Street Cleveland, Ohio

*We supply everything used on a  
Warm Air Heating Job*

# MONCRIEF FURNACES

**CAST  
FURNACES**

**BOILERS**

**STEEL  
FURNACES**

### (Distributors)

Carr Supply Co., 412 No. Dearborn St., Chicago, Ill.  
August Bery & Son, Mack Ave. at Drexel, Detroit.  
The Henry Furnace & Foundry Co., Pittsburgh, Pa.  
Frontier Water & Steam Supply Co., 366 Oak St.—481 Ellicott St., Buffalo, N. Y.  
Johnson Furnace Co., Kansas City, Mo.  
E. A. Higgins Co., 1112 Douglas St., Omaha, Neb.  
Moncrief Furnace & Mfg. Co., Dallas, Tex.  
E. W. Burbank Seed Co., 29 Free St., Portland, Me.

J. F. Conant, Ry. Term. Warehse., Troy, N. Y.  
Wilkes-Barre Hdwe. & Stove Co., 18-20 So. Washington St., Wilkes-Barre, Pa.  
The Crawford Heating Co., Steuvenville, Ohio.  
Stockhoff Supply Co., St. Louis, Mo.  
Follansbee Bros., 324 So. Missouri St., Indianapolis, Ind.  
Eastern Office  
Room 1306, 11 W. 42nd St., New York City. E. L. Garner, Manager.

*When writing mention AMERICAN ARTISAN—Thank you!*

# A Statement by the President

of the American Furnace Co., St. Louis



FOR more than thirty years, the trade has witnessed the steady progress in the design and construction of "AFCO" Boiler Plate Furnaces. Each new development has been accepted without the slightest hesitancy, because we have always maintained a strict rule that it must be carefully tested and proved beyond a doubt before it could be announced to the hundreds of "AFCO" installers.

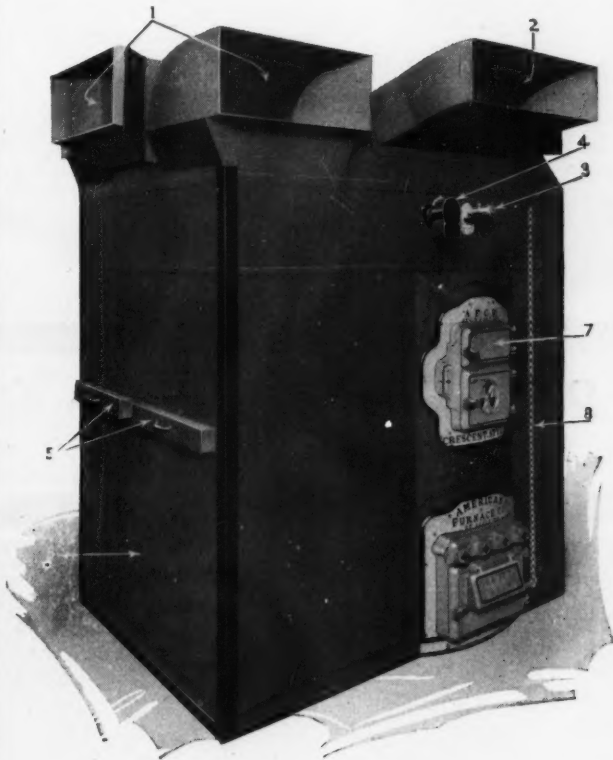
The new "AFCO De Luxe" Healthful Heating Unit is no exception. It's the result of painstaking effort to produce a Unit that the dealer could recommend and sell with full confidence that it represented the most modern, the most scientific, and the best value in healthful home heating equipment.

We believe every furnace installer will welcome this new unit as a real opportunity to get a larger share of the profitable business in his community.

*H. V. Bayse*

President

Eight  
Prominent  
Features!



Write for literature describing this new "AFCO" Deluxe Unit. There is no obligation.

## American Furnace Co.

2719-31 Morgan Street

ST. LOUIS

MISSOURI

When writing mention AMERICAN ARTISAN—Thank you!



# Unadorned Strength

The Western Steel Furnace was designed by expert engineers for the sole purpose of heating. Its attractiveness to the eye is incidental. No do-dads here and there for reverberating sales talks. No experimental parts included to see how they work. Every inch of the Western has been thoroughly tested. Every part has a definite purpose.

Look at the sturdy furnace illustrated on this page. Note its UNADORNED STRENGTH. There

it stands, staunch and ready for the toughest usage any customer of yours can put it to.

Western Furnaces in every part of the country have been serving year in and year out, no matter how severe the climate, no matter how neglected by householders.

Look to the list below for our jobber nearest you. He'll be glad to show you one of these husky products of the North.



## WRITE NOW

for our latest catalog. We'll gladly send you any information you desire if you send your name and address to us.

## RIGHT NOW

is the time to be getting your stock lined up for next fall. Look over the Western before you buy another furnace.

## WESTERN STEEL PRODUCTS CO.

130 Commonwealth Ave.

Duluth, Minn.

### Group One

Pittsburgh, Pa. — Pittsburgh Furnace Parts Company  
Ravenna, Ohio — Ravenna Furnace Company  
Cincinnati, Ohio — Niehaus Furnace Repair Company  
Atlanta, Ga. — Moncrief Furnace Company  
Chicago, Ill. — Western Steel Products Company

### Group Two

St. Louis, Mo. — MacRoy Supply Co.  
Kansas City, Mo. — Kansas City Furnace Co.  
Duluth, Minnesota — Marshall-Wells Co.  
Omaha, Nebraska — A. Y. McDonald Mfg. Co.  
Lincoln, Nebraska — A. Y. McDonald Mfg. Co.  
Sioux City, Iowa — A. Y. McDonald Mfg. Co.  
Minneapolis, Minn. — A. Y. McDonald Mfg. Co.  
Fort Dodge, Iowa — Leighton Supply Co.  
Fargo, N. D. — Fargo Cornice & Ornament Co.

### Group Three

Seattle, Wash. — McPherson Furnace & Equipment Co.  
San Francisco, Cal. — Pacific Sheet Metal & Furnace Co.  
Winnipeg, Man. — Marshall-Wells Co.  
Saskatoon, Sask. — Wood-Vallance Co., Ltd.  
Regina, Sask. — Wood-Vallance Co., Ltd.  
Edmonton, Alta. — Marshall-Wells Alberta Co., Ltd.

When writing mention AMERICAN ARTISAN—Thank you!



# 4 Outstanding Waterbury Features that Mean MORE Sales and GREATER Profits



The Waterbury Merchandising Service Plan will help you sell your prospects on the Waterbury Heating System. Send the coupon for full particulars of the Waterbury Franchise, which includes this plan.

## ① Permanently Gas-Tight

The body and radiator of the Waterbury are ONE-PIECE, all-steel construction, with every seam acetylene welded, and guaranteed absolutely gas-tight for ten years.

## ② Controlled Humidity

The exceptionally efficient Waterbury humidifier moistens the warm air sufficiently for real comfort. Positive humidity, either fully automatic or semi-automatic type, as desired.

## ③ Extra Heavy Construction

The extra heavy construction of the Waterbury adds years of life, and replacement of parts is rarely necessary. Steel parts are guaranteed for ten years.

## ④ Fuel Efficiency

Every size Waterbury heater has a special radiator that gives greatest efficiency for that size heater. Patented baffle plates assure deflection of heated gases so that they reach every portion of the radiator and produce greatest amount of heat from fuel consumed.

**Mail This  
Coupon  
NOW!**

### The Waterman-Waterbury Co.

1122 Jackson St. N. E. Minneapolis, Minnesota

Complete Stock Carried in

PHILADELPHIA DENVER TACOMA  
KANSAS CITY CHICAGO PITTSBURGH  
SAN FRANCISCO

Waterman-Waterbury Co.  
1122 Jackson St. N. E.,  
Minneapolis, Minnesota

Please send complete details of the  
Waterbury Franchise and Merchandising  
Service Plan.

NAME.....

ADDRESS.....

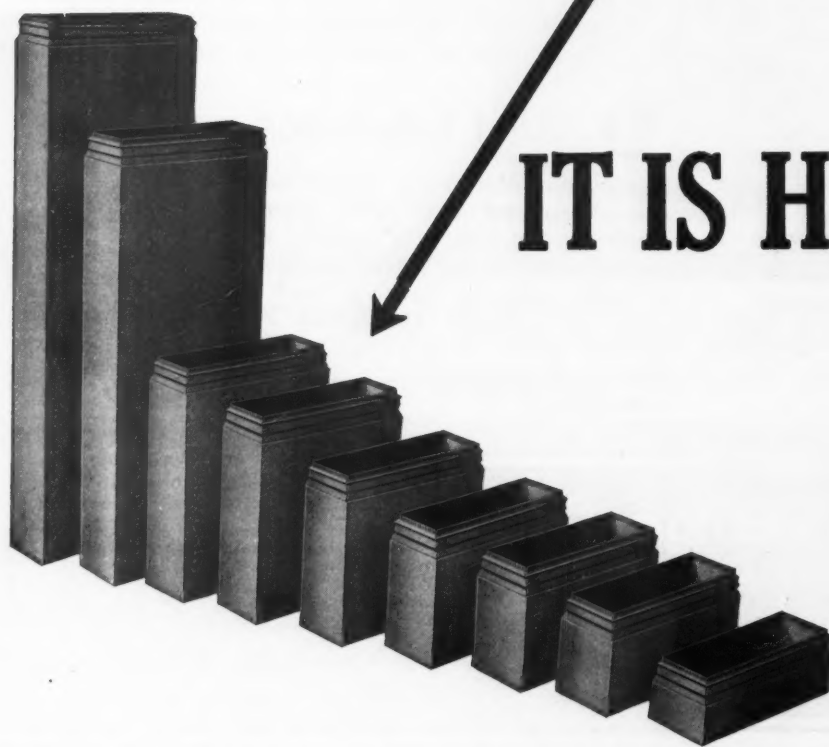
CITY..... STATE.....

When writing mention AMERICAN ARTISAN—Thank you!

# A POINTER on HANDY PIPE

*It Is Built to Outlast the  
Buildings It Goes Into*

We started out, in 1894, to  
make HANDY pipe the very  
BEST pipe to be had—and  
we've never switched from that  
objective.



**IT IS HANDY** BY NAME  
TO USE  
TO GET

**F. MEYER  
&  
BRO. CO.**

Peoria Illinois

*"The Handy Pipe People"*

*When writing mention AMERICAN ARTISAN—Thank you!*

# THE NEW Automatic HESS WELDED STEEL CONSTRUCTION



HERE is a furnace with grate surface of 338 sq. in. and for heat pipe area up to 590 sq. in., large enough for a large share of your furnace sales. It is automatic and comes complete with:

1. Automatic humidifier—float valve type.
2. Automatic, electric, thermostatic control.
3. Electric booster blower, on stand, cord and socket.

Furnished complete and standard with these features, it sells for little more than an ordinary furnace of the same capacity. Here is a furnace you can feature and which will sell to your customers on sight. We offer an exclusive dealer proposal outside of Chicago district or where we are not represented.

Hess Warming & Ventilating Co.  
1207 South Western Ave. Chicago, Ill.

THE Hess Automatic Furnace Number 47A complete with thermostatic control, electric blower and automatic water pan. Sells complete for only \$115.00. Ask for particulars and complete literature.

Hess Warming & Ventilating Company,  
1207 So. Western Ave., Chicago, Ill.

Please send me complete information on your dealer plan on the Hess Automatic Furnace.

Name.....

Address.....

Town..... State.....

When writing mention AMERICAN ARTISAN—Thank you!



Just as soon as the fires are out and folks still realize that they need *better heating* next winter—start finding your prospects.

AND AFTER YOU HAVE FOUND THEM SHOW THEM—



**S**HOW them this furnace which *will* give them better and more economical heating service. Whether or not they are buying now or next fall show them the famous and exclusive Ath-A-Nor Three-Way Air Blast feature. Show them that this one feature alone makes

this furnace an outstanding choice. Explain how this feature gets all the heat out of the fuel and provides

## SMOKELESS

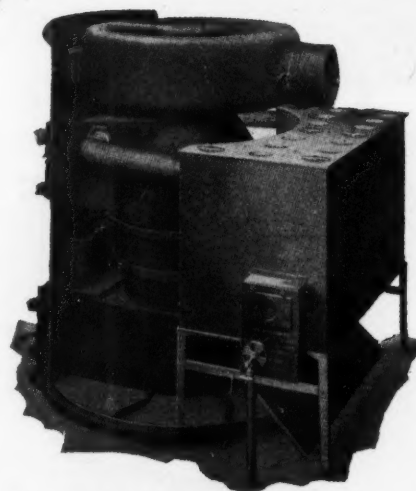
operation. They will remember this important feature and when you follow up the call later you can make a sale at an extra profit.

Besides the Ath-A-Nor the May-Fiebeger line includes several styles and a complete range of sizes in both cast iron and steel furnaces. Every May-Fiebeger furnace is high grade and reasonably priced.

**THE MAY-FIEBEGER CO.**  
Newark, Ohio

IF  
FOLKS  
WANT  
TO  
HEAT  
WITH  
GAS—

*Here's  
the unit  
to sell*



## The MUNKEL GAS ATTACHMENT

(Fits Any Coal Furnace)

THERE are many advantages of selling new customers Munkel Gas Heating. The desirable cleanliness of gas fuel—the use of the furnace for burning rubbish, etc.—the extra heating surface of the cast furnace (the Munkel Gas Attachment heats both units) and the choice of two fuels.

For old installations its a big business getter. Every furnace user is a LIVE prospect. Show them how they can have CLEAN GAS HEATING with the Munkel Gas Attachment and you'll make BIG PROFITS RIGHT NOW.

*Write today for full details and prices*

**The MUNKEL-RIPPEL HEATING Co.**  
"31 Years of Service" COLUMBUS, OHIO



### An Emblem of Quality

The dealer who has never sold Torrid Zone steel furnaces has no conception of the many advantages this furnace line offers. To say you are familiar with Torrid Zone construction is not enough. There are, free engineering service, newspaper and dealer help advertising, financial aid, an unusual va-

riety of furnace sizes, quick deliveries made possible by large warehouse stocks, and a score of other Torrid Zone service features of vital interest to every furnace dealer. Why not investigate for yourself Torrid Zone possibilities. Write for complete information on the Torrid Zone line.

**LENNOX FURNACE COMPANY, INC.**  
Marshalltown, Iowa Syracuse, N. Y. Toronto Winnipeg

Your prospects will  
prefer the—

## GILTEDGE FURNACE

and you will prefer the profits and  
prestige the agency bring you

**R. J. SCHWAB & SONS CO.**  
283 Clinton Street Milwaukee, Wis.





Residence of  
Mr. Harold Rehberg  
Janesville, Wisc.

NOTE: Customer satisfaction and recommendations to friends is another big reason why two-thirds of Premier Dealers made more money last year than ever before.

## What I Think of Premier—

By MR. HAROLD R. REHBERG

A Premier User of  
JANESVILLE, WISC.

Premier of Dowagiac,  
Dowagiac, Michigan

Gentlemen: Replying to your inquiry as to how my Premier furnace is working, I beg to inform you that it is giving perfect satisfaction.

It is easily controlled and heats my house to seventy degrees in any weather.

The upright shaking lever, the duplex clinkerless grate, the direct draft damper and the slotted firepot were the deciding features which caused me to choose the Premier—a decision I have never had cause to regret.

The fact that I have repeatedly recommended the Premier and its installation to my friends and neighbors speaks louder of my appreciation of my heating plant than any formal letter of recommendation possibly could.

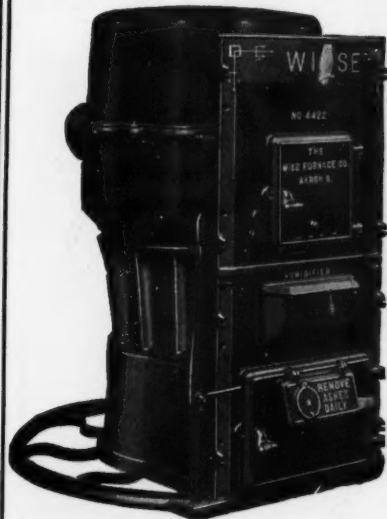
Assuring you of my willingness to have you refer prospects to me and wishing you continued success, I remain, yours very truly,

*Harold R. Rehberg*

—all your purchases from one source

## WISE FURNACES

BELOW is shown the New Wise Steel Furnace. A Wise product and a steel furnace having exclusive Wise features. Notice the Cast Iron Soot Box and Clean-Out on bottom of Radiator—the weak spot of steel furnaces eliminated.



THE Wise Open Dome 40 Series with Self Cleaning Radiator is even better than ever with its new One-Piece heavy Cellular Firepot and new Elbow Shaped Collar on inside of radiator which is turned up so that all the heat must follow the castings to the top before entering the flue.



Write for catalog No. 23



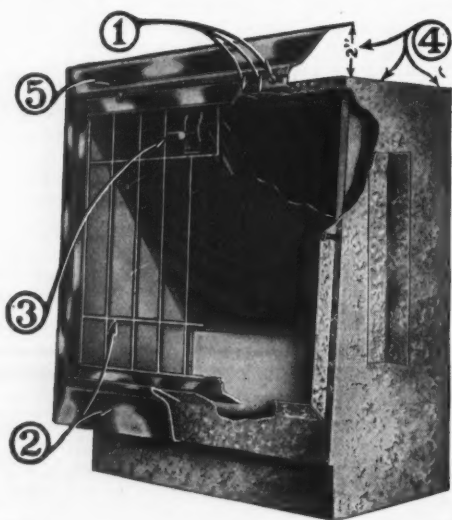
THE Wise 20 Series Return Flue Radiator has a new Patented radiator. Now cleaning the radiator is easy. The feed chamber and the radiator are designed so that the fire flues are easily gotten at from the upper feed door with the soot falling directly into the firepot. Also equipped with the new Cellular Firepot.

The WISE FURNACE COMPANY, Akron, Ohio

When writing mention AMERICAN ARTISAN—Thank you!

# REMEMBER THE REGISTERS

go in the living rooms and  
**TODAY** the kind of registers  
you sell has to a great deal to  
do with the sale of a warm air  
heating installation—



**NO STREAK**  
**REGISTERS**

are of modern design and con-  
struction — they look smart  
and their patented construc-  
tion prevents streaked walls.

**ROCK ISLAND REGISTER CO.**  
ROCK ISLAND, ILL.

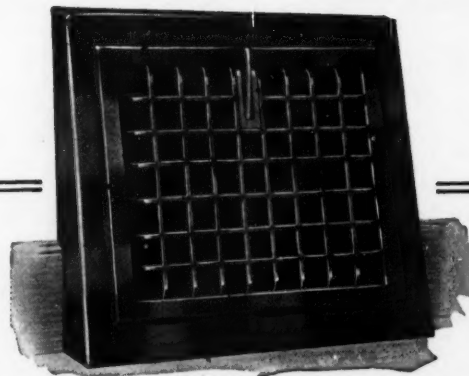
ROCK ISLAND REGISTER CO.  
ROCK ISLAND, ILLINOIS

Send me your catalog and price list.

Name .....

Street and Number .....

Town ..... State .....



## The AUERISTOCRAT

of all registers, combining air capacity,  
decorative and concealing features.

Designed to conform with the Standard  
Code so they fit all standard boxes.

Auer Patented mechanical features make  
it perfect in operation,—quick and easy  
to install.

*Auer's Save Hours and Dollars*

**The AUER REGISTER CO.**  
Cleveland, Ohio



**191 Cleaning  
Jobs Brought In  
\$1,962.75**

*Our one-man outfit makes low overhead*

**F**T. WAYNE Service and Specialty Co., Ft.  
Wayne, Ind., reports that their first 191  
furnace cleaning jobs with their Super Suction  
Cleaner averaged, gross, \$10.25 each, for clean-  
ing alone.

Seventy-two per cent of these jobs needed repairs—  
think of 137 repair jobs. They increased the total tak-  
ings nicely. Furnace cleaning pays—pays well—and  
repairs add much good velvet.

*Write today for our Plan Book—it's free.  
The Ft. Wayne folks say it helped them a lot.*

**THE NATIONAL SUPER SERVICE CO.**  
1944 North 13th Street Toledo, Ohio

When writing mention *AMERICAN ARTISAN*—Thank you!

## STOP THAT WAR CRY— “My Furnace Leaks”

USE WAMPUM BRAND



# FURNACE CEMENT

FOLKS now-a-days won't stand for constant re-cementing. Leaky furnaces and frequent bills for re-cementing mean lost customers. Keep folks sold on warm air heating so you can sell them again by using Wampum Brand Lastik Furnace Cement—the cement that stands up permanently.

Right now after a hard winter you might have customers who are ready to scalp you—don't turn the white feather—take your medicine but re-cement the job for the last time with Wampum Brand.

IT'S firmly knit—nonporous—acid-proof—odorless—pliable and it WILL NOT CRACK.

*If you want to make more "wampum" on your furnace jobs—signal your jobber for a can of Wampum Brand Lastik Furnace Cement now.*

**LASTIK PRODUCTS CORPORATION**

General Offices, Oliver Bldg.

PITTSBURGH, PA.

Also Manufacturers of LASTIK ROOF PAINTS and CEMENTS—  
LASTIKALK—LASTIK DAMPPROOFINGS



See this superior furnace cement—visit our booth at the Fort Pitt Hotel, Pittsburgh, Pa., during the National Sheet Metal Convention, June 10th to 13th.

## The Public Is NOW READY for the Farris Waterbase Furnace



TODAY folks are interested in something better—in fact they demand it. The Farris Waterbase will get you the cream of the business and with better profits. Send the coupon today for full details.

FARRIS FURNACE CO., SPRINGFIELD, ILL.

Send me full details and dealers proposition on the Farris Waterbase.

Name.....

Address.....

City.....

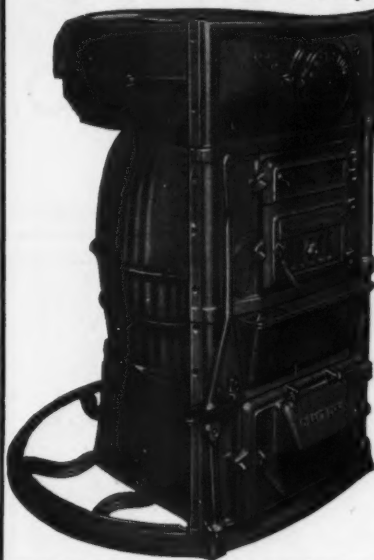
State.....

A.A.

## BRILLION FURNACES

To meet the demand for high quality

AT PRICES  
THAT COMPEL  
MORE SALES



EVERYBODY demands higher quality these days and they expect close prices. You can meet these conditions and still make good profits with the Brillion. It's a high class furnace and its price is much lower than you'd expect to pay for such high quality under any conditions.

Look it over—it has the quality and the features and its unusually low price is possible because of our different sales plan and other low overhead expenses.

Just mail the coupon today for full details

BRILLION FURNACE CO., 3215 Elston Ave., Chicago.  
200-300 Park Ave., Brillion, Wis.

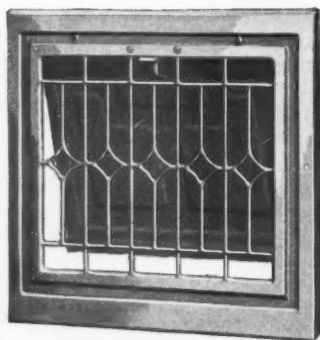
Send me full details and Catalog No. 80.

Name.....

Address.....

When writing mention AMERICAN ARTISAN—Thank you!



**INDEPENDENT REGISTERS****VENTILATORS  
GRILLES**

Any Size  
Any Finish

*Our new catalogue  
will interest you.  
May we send you  
a copy?*

**INDEPENDENT REGISTER & MFG. CO.**  
3747 East 93rd Street ~ ~ Cleveland, Ohio

**"American Seal"****FURNACE CEMENT**

*Roof Cement—Stove Putty  
Plumbers Putty*

**PAINTS AND SPECIALTIES**

**WILLIAM CONNORS PAINT MFG. CO.**

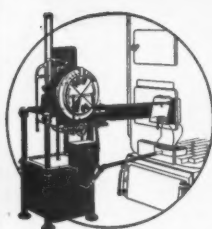
Established 1852

TROY

NEW YORK

JAMES L. PERKINS, Western Distributor  
140 South Dearborn Street, Chicago, Illinois

**Here's Your Big Opportunity to  
MAKE MORE MONEY  
in 1930!**



Find out about "balanced heat"—the McIlvaine Method of oil heating, approved and recommended by leading Warm Air Heating Experts. The McIlvaine Continuous Flame Oil Burner, with the five flame sizes, automatically balanced to the heat demand, listed as Standard by the Underwriters Laboratories, and Approved by the New York Board of Standards and Appeals, gives exceptionally satisfactory results and is highly efficient when installed in Warm Air Heating Systems.

*Write Now—for Dealers' Proposition,  
Sales Plans and Complete Information*

**McILVAINE BURNER CORPORATION**

747 Custer Ave.

Dept. A

Evanston, Illinois

*A  
New  
Furnace  
Paste*

**(LARCO  
MINERAL  
PASTE)**

*Non-Cereal  
Non-Souring  
Keeps after  
Mixed*

**For Better, Neater, Quicker Work**

Asbestos Paper does not absorb as much Larco Mineral Paste as it does cereal pastes. Paper does not become soggy—not so apt to tear.

Larco Mineral Paste does not turn brown—no stains—mice will not touch it either when moist or dry and it does not gum up the hands.

Larco Paste can be kept on hand mixed ready for use as it does not sour. It has greater covering qualities.

It slips easily but adheres permanently.

*Write for circular which tells all about it—get Larco prices.*

**LARSEN-BENNETT COMPANY**  
Omaha, Nebraska



**LAMSON  
& SESSIONS CO.**

CLEVELAND, OHIO

Plants at Cleveland and Kent, Ohio; Chicago and Birmingham



No. 60

**FURNACE  
DOOR  
HANDLE**

*Furnished with or  
without attachment*

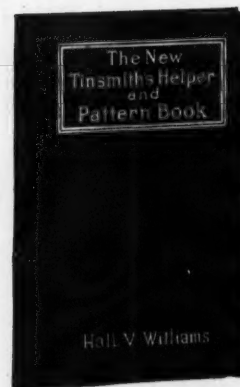
**T**HIS is only one of the numerous style handles we make—if this is not the handle you wish please write us and we will send samples of other designs.

**THE FANNER MFG. COMPANY**  
BROOKSIDE PARK Dept. F CLEVELAND

352  
Pages

247  
Figures

165  
Tables



*Flexible  
Leather  
Binding*

*Measures  
4 1/2 x 5 in.*

**One of the Best and  
Most Popular Books**

on tinsmithing and elementary sheet metal work. This is the latest edition and the contents are new excepting the chapter on Mensuration, which has been re-arranged and amplified, and possibly some fifty pages of problems and tables which are classified to the phase of the work they cover.

**This Book Covers Simple Geometry and  
Every Phase of Modern Pattern Cutting**

from the making of every type of Seam, Lap and Joint, to Conical Problems and Tinware, Elbows, Piping, Ducts, Gutters, Leaders, Cornice and Skylight Work and Furnace Fittings.

In fact an excellent all-around book for every man in the trade. Mr. Williams writes in an easy-to-read, helpful manner, giving you all the necessary details about each subject he handles.

You should add this widely read book to your collection now.

PRICE \$3.00

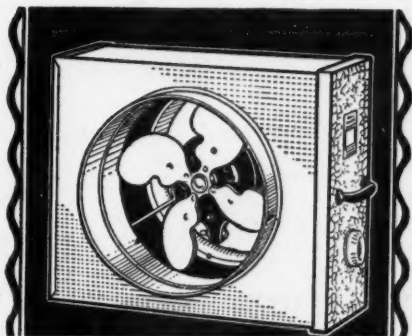
**AMERICAN ARTISAN**

139 North Clark Street

CHICAGO

*When writing mention AMERICAN ARTISAN—Thank you!*

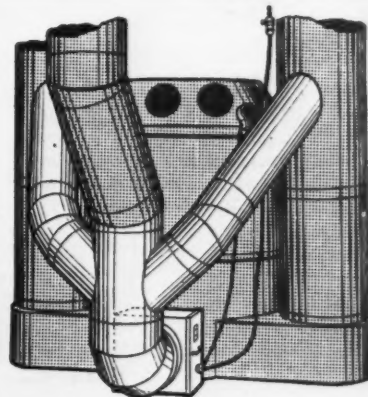




Write for full details and names of nearest jobber.

## A-C Thermostatically Controlled Automatic HEAT BOOSTER

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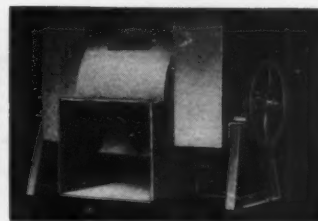
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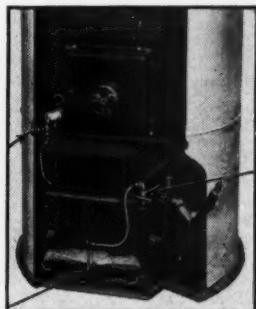
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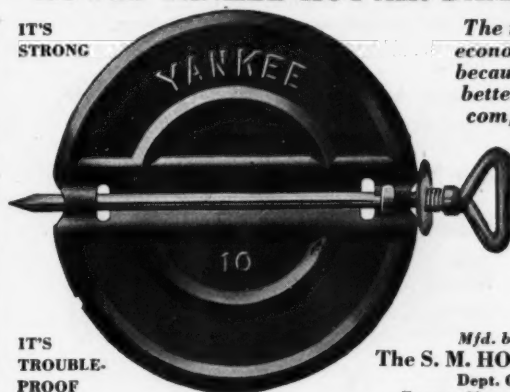
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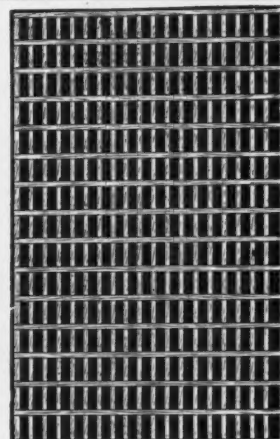
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# American Artisan

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AND SHEET METAL JOURNAL

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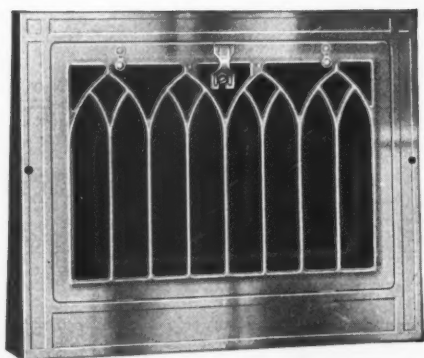
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## STEEL - SERVICE

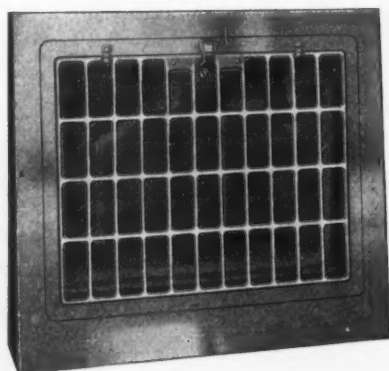
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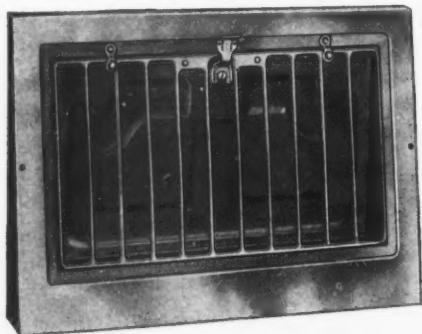
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# American Artisan

THE WARM AIR HEATING  
AND SHEET METAL JOURNAL



Vol. 99

CHICAGO, MAY 10, 1930

No. 10

## The Sheet Metal Business Expands

WE do not set ourselves up as infallible observers of the sheet metal industry. Nevertheless, we cannot help but see that there is a decided cleft among the contractors in the industry.

Two classes of contractors are being evolved. The first class consists of the contractor who believes that there is more profit in lots of small jobs than there is in fewer, large contracts. This class is doing the roofing, flashing, gutter, repair work on individual houses, for neighborhood customers, perhaps for the speculative home builder.

The second class, on the other hand, seems to have made up its mind that the real profits in the sheet metal are to be made in the large job.

Now this situation should be of interest to every man having to do with sheet metal. What is the second class finding to encourage them in their endeavors?

From our observations we find that the contractor going after the big stuff is finding that he can operate most successfully when he specializes in one field of work. He may be tending toward interior ventilation and blow pipe work. If so he is taking contracts to install all the duct and blower work in large industrial and commercial establishments where the taking in and carrying out of large volumes of air has become an essential part of the architectural and engineering plan for the structure.

Or we may find this type of contractor engaged in ventilating work. One such contractor we know has built up a special service for the industrial buildings of his home city whereby he has successfully secured most of the contracts for the type of ventilating work which requires gravity ventilating systems for ovens, furnaces, rooms and plants having steam, gases, odors, fumes, etc.

Again there is the contractor who has built up a reputation as a roofing and ornamental sheet metal contractor. This contractor is now laying roofs with iron, copper, aluminum and special metals. He is designing and erecting marquees, awnings, ornamental metal work such as spandrels, cupolas, cornices, etc. And in this particular field the contractor is finding the architect and engineer more receptive to argument on metal than he has been for many a long year.

Last, there is a class of contractors which is becoming more and more common. They really should be classed as manufacturers of sheet metal specialties. Yet the actual manufacturing has been started only because they can't buy the sheet metal specialties they need for the kind of business they are doing. One such contractor located in an Indiana city has secured a contract to furnish all kinds of metal trays, boxes, spool and thread holders, machine guards, and a long list of things made in metal for two large hosiery manufacturers. This contractor reports that business has been steady and profitable.

Two conclusions can be drawn from these observations. The first is that the contractor must decide whether he thinks he has the courage, the ability, the organization and capital to go after big business or whether he believes he fits in best among the contractors building profits from a volume of small sales.

There is business and profitable business for both classifications. If the contractor elects to do small jobs he ought to realize that to make money his shop and sales force have to be organized around volume. The little contracts must be kept rolling in. Seasonal slumps have to be overcome, for with a volume of small sales, one poor season can spoil three good seasons.

The contractor who elects to do big stuff should have adequate capital and above all else has got to be a close estimator. One poor estimate, or rather one poor guess, on a large contract can easily wipe out all the profits built up through months or years of struggle.

We are setting down these thoughts because we believe that many sheet metal men are wondering why business isn't like it used to be but don't know why. Probably they are trying to do all kinds of work and are finding that every way they turn they bump into a specialist, thoroughly organized to get business in his field. It would seem that within a short time this division will be even more pronounced and the necessity for choosing one field or the other will confront every contractor. We wouldn't mind our readers telling us what their experience has been in this proposition or how it is in their home stamping ground.

# The Third Article On Cost Accounting

**I**f you studied your last lesson and mastered it, you are ready to go a bit farther into that least understood business activity—Book-keeping.

I hope you are now less afraid of that dreadful thing called Double Entry Bookkeeping. Really, it won't bite you.

I want to discuss a few of the transactions I did not have time and space for in the last article. There we had run down your dollars and located them in five different



**Joseph G. Dingle, C. P. A.**

places. You had money in the Bank, in Rent, in Machinery, and also in Materials and Supplies. Not only did you have your money invested in these five places, but you had some of your creditor's money there too.

Let us now take up a customer and see if we can sell him a furnace job. Of course you can sell the job, but let's look at it as a bookkeeper rather than as a salesman or an installer.

The order is taken for a certain price. Work starts. The workmen

**This third article in the series on Cost Accounting by J. C. Dingle, takes up the handling of your work after your shop is operating. Labor, Materials, Payroll, and Jobs are explained.**

**Have the first and second installments handy for reference.**

go out and take a lot of material with them. The men must show on time cards where they are working. Someone must make up materials tickets listing the material that is delivered to that job. These time cards and material tickets must come to the bookkeeper to be posted to that job ticket.

The material ticket tells the book-

keeper that materials have been removed from stock and placed on the job. A suitable "Cost Sheet" should be provided for each job—to which the bookkeeper posts the material and labor charges as they arise. If you recall your last lesson, you will say we must charge Work in Process—Smith Job—and credit Materials with the materials taken to the Smith Job. After paying the men, we enter their pay checks—charging Pay Roll and crediting the Bank—to record the moving of some money from the bank into wages. After paying the men, we can now check over this labor we have bought and transfer it to where it belongs.

# MATERIAL TICKET

193

CHARGE \_\_\_\_\_ JOB WITH THE

FOLLOWING MATERIALS:

PIECES	DESCRIPTION	POUNDS	PRICE	AMOUNT

APPROVED \_\_\_\_\_

SIGNED \_\_\_\_\_  
 EMPLOYE

The Material Ticket ought to be used every time material is moved from shop to job or from storage bin to job in the shop. From the information put on the Material Ticket, proper cost items are carried onto the Cost Sheet so that when a job is completed the contractor knows just what to charge for Costs. This sheet is also used to keep track of the inventory of Materials going through the shop

specific contract—through Work in Process account. The labor which is sold directly to customers at an hourly rate we charge to Cost of Sales of Labor. These charges to Work in Process and Cost of Sales—Labor, together with such charges to Idle Time and “Indirect Labor” permit us to distribute to proper accounts all labor paid for.

Labor, like materials, must be sorted and placed in proper accounts. Unlike Material, Labor is hard to keep up with. A hundred dollars worth of material clutters up the shop—it can be seen. It can be placed on a shelf and will remain there. But a hundred dollars worth of labor if put in some fellow's house, is out of sight of the shop and office and is most likely to be forgotten. Labor, then, must be carefully accounted for and promptly distributed to proper accounts each week. If the payroll amounts to \$100.00, we debit Payroll and credit Bank with that amount. Then we break up the amount and distribute it to proper accounts, crediting Payroll account. Payroll account, then, is merely a temporary resting place for labor costs—pending distribution.

Work in Process account has been mentioned above in connection with contract work. It is just as its

[illegible]

The Time Card, in one form or another, is absolutely essential in every shop where the slightest attempt is made to keep track of costs. On this card every workman should be compelled to account for his time all through each day and week. From its columns all jobs going through the shop are credited with their proper amount of labor, so that one job won't be charged with costs which belong to another job.

[illegible]

The Cost Sheet is the medium by which the Work In Process account explained in this article is built up and analyzed. The aggregate amount of Material and Labor charged to the various jobs in process should total the same as shown on the Work In Process account at the end of each month. This sheet ought to be faithfully kept on every job

name indicates, an account for carrying the cost of work while in process. When the job is finished, we credit Work in Process, with the cost of the job and charge Cost of Sales. We also charge the customer and credit Sales.

You will wonder at these two entries. Just stop and analyze the situation. First, you have, through numerous material and labor charges, accumulated in Work in Process the cost of certain contract work. Now that the job is completed we charge the customer and credit Sales. We might break up the contract price into Material and Labor and credit Sales of Material and Sales of Labor. Having charged the customer and credited Sales, we



must now go back to our Work in Process account and bring over to Cost of Sales, Material and Cost of Sales—Labor the material and labor items consumed in that job just billed. It is the same old rule—the moving of money values from this account to that account. As your men assemble their material on the shop floor, so does the bookkeeper assemble in Work in Process account material and labor costs for your contracts—each in such a manner that we can always know the cost of each contract. The total of the cost sheets in operation must equal the amount shown in Work in Process account.

I can hear you say that there is too much red tape in that Work in Process account. You are jumping ahead of me and finding spooks. Suppose I said you should never put material for two jobs on one truck at one time. You would say I was crazy—that your truck driver knew what material went to the Smith Job and what belonged over on the Jones Job. Don't you suppose your bookkeeper can tell from material tickets that this is for the Smith Job and that is for the Jones Job. Work in Process account, like your truck, can handle material for several jobs at the same time.

Here is another reason why we must have a Work in Process account. You sold that job for \$250.00 and that is all we can charge the customer. If we charged material and labor to the customer's account as the work progressed, we would find possibly a charge of \$200.00 in the account and yet the customer actually owes us \$250.00. Or, that charge may have mounted to \$300.00 and still you sold it for \$250.00. What are you going to do with the balance in the customer's account? Your contract considered certain work to be done for which you were to receive \$250.00. Your entry then is Debit Customer and Credit Sales—\$250.00. That's all. Now, having finished that job, we take its cost out of Work in Process and charge Cost of Sales.

---

**In the next issue, when we take up the fourth article of this series, we will show typical items entered on the new Ledger Sheets—Work in Process, Cost of Sales and Labor.**

**Keep this second article for reference when Mr. Dingle shows what these sheets look like and how the transactions are entered.**

---

After you have thought these matters out, you will begin to see the separateness of each transaction. You will see the SALE in Sales account—a credit—and you will see the COST OF SALE in the Cost of Sales account. Then you know that the difference between the Sale price and the Cost of the sale is your gross profit, out of which you must pay your overhead before you have a profit.

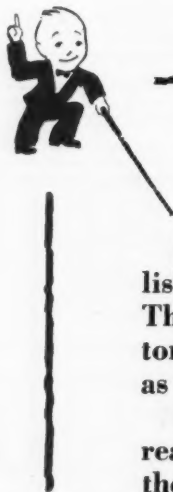
To these Sales and Cost of Sales accounts the different jobs come as they are finished. At the end of the year we have in these accounts the story of your year's business in

so far as Sales, and cost of materials and direct labor are concerned. We can also take these accounts to pieces and say you made money on the Smith job, but lost money on Jones. We can go even farther than that. We can say materials cost so much while your estimate was only so much.

If your truck driver can haul men and materials for two or more jobs on one truck, your bookkeeper can handle materials and labor for a dozen jobs in one Work in Process account.

Remember that Bookkeeping is but the orderly sorting of business transactions according to a predetermined plan with the ultimate end the clear concise statement of that business' activity. You want to operate your business successfully, you want to make it pay. Your bookkeeper is, or should be, your pilot. By means of a well designed set of books she can show you the shoal places. She can follow your dollars wherever they go, and in whatever form they may be, and at the end show you how and why you make or lose money.

If you are now ready to see such an account layout as will fit the average Sheet Metal Shop watch the *AMERICAN ARTISAN* for the next article.




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**In each issue of *American Artisan* we publish one or two pattern drafting problems. These are prepared by two contributing editors, both practical sheet metal men as well as instructors.**

**Many of these problems are submitted by readers. The request is passed on to one of the editors and the problem worked out. This is part of the service *American Artisan* is giving its readers. And there is no cost for the service. If you have a pattern problem you need help on—call on us.**

# We've Got To SELL 'Em!

**M**OST of us in the furnace industry know Jay Barton. As western representative of the magazine, *Sheet Metal Worker*, he made a name for himself among the manufacturers, jobbers, dealers and the industry in general. Then he went out on his own with the Heating Systems Corporation in Joliet, Ill. In this field he established himself as a full-fledged warm air heating man, and in this part of the country at least was recognized as a well rounded heating engineer.

Now he has organized a new company which is going to specialize in installing heating systems of the most advanced design, specializing in large heating jobs.

All of which is introductory to a few thoughts which he set out for us not many days ago when the industry was being taken apart here in this office. We think that these thoughts from as well rounded an experience are worth reproduction. Here they are:

"For the last twelve years I have watched with much interest the development of the warm air heating industry. In the last few years the speed has quickened.

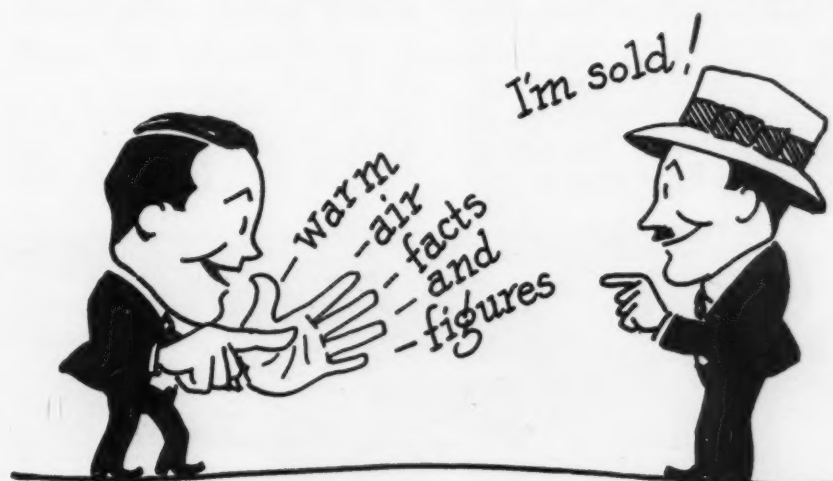
"In days gone by, our industry prospered because people did the buying—not only from us, but from all other classes of merchants. Today, people have to be sold and other industries have set a pace that in most instances gets a larger slice of that consumer's dollar than we do. Why? Because they have learned the value of putting as much time and thought into merchandising as we put into our craftsmanship.

"And yet, we have in the heating field so many products with popular

appeal that a high class specialty salesman could clean up if he had the mechanical ability to do the installation work. Just for example, here is a part of the list. The standard code gravity heating system; the mechanical heating and ventilating system; the air-conditioning system (and watch out how you use that term, it is different from a mechanical system). Then the list of

There seems to be an idea that if you hitch a fan to a furnace you have an air conditioning system. No such thing. And even if you attach an automatic humidifier and a temperature control, you are still a long way from an air-conditioning system.

"On air-conditioning systems for homes, be sure that you use the term correctly. Remember that peo-



oil burners, gas units, automatic stokers, temperature control apparatus, humidifiers, insulation, blowers, etc. Sure, most of these things are specialties right now. But you never heard of a grocer making any money on sugar, did you?

"Wherever I've traveled lately, dealers have been asking questions on air-conditioning. Like all new ideas (only new in the residence field, however), air-conditioning seems to be having its birth pains. In the first place the meaning of the phrase is misunderstood. And relative humidity, which is a part of air-conditioning, is in the same boat.

"Know the difference between a strictly mechanical warm air system and an air-conditioning system.

ple nowadays go to theaters, schools, etc., where real air-conditioning is installed. They won't be fooled long. That term is spreading fast and is one of the reasons why I say, keep up. Learn to sell all the advantages that this system has to offer over anything yet known in the heating and ventilating field. You'll be surprised at your lack of competition.

"There's just as much noise today about the price cutting tactics found in the cheap installations as there has always been. Some say we will run them out of the industry. Don't fool yourself. You will always have them, just as you will always be able to buy a ten dollar suit. Get out of that class if you are in it."

# A Ventilating Installation With Unusual Features

**B**LOW PIPE and industrial ventilating is a field in which the highest quality of workmanship and layout are required of the sheet metal contractor. In spite of this restriction, however, the men operating in the field have carried on their work with a minimum of trumpeting but with a maximum of successful installations.

One of the pioneers in this field is Alfred Goethal, of Milwaukee. Mr. Goethal operates in a city which is highly organized industrially. Manufacturing plants of many different kinds and of widely varying size and operating conditions call for the best of workmanship and planning. This has not, however, hindered his firm from progressing

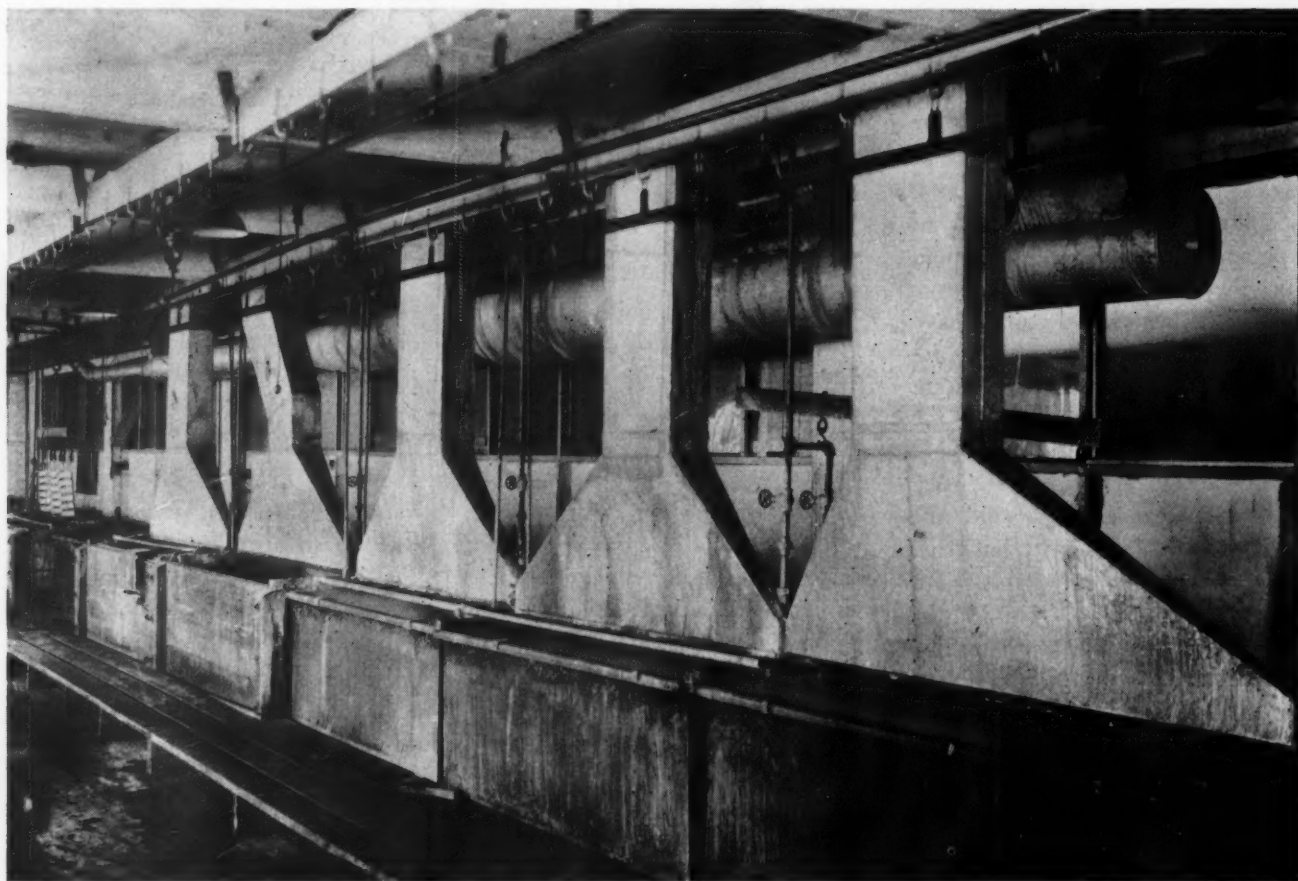
rapidly year after year until today it has a record of many successful installations.

An interesting job done by this company is illustrated in the photograph which accompanies this article. The installation was made in a plating and enameling plant in Milwaukee. The vats are used to pickle sheets and metal products. The sheets come down the overhead conveyor and are lowered into the tank. This operation necessitates enough opening over the tanks to allow the sheets to be put into the solution without loss of time or delay of the conveyor.

Older installations used a hood which covered the entire area of the top of the tank. These hoods came

down to about the level of the workman's head. Not only did the hoods make handling of the products troublesome, but the pull into so large a nozzle pulled the fumes straight up to the hood and thereby passed around the head of the workman who was watching the process going on in the tank. Mr. Goethal was called in to prepare a better scheme and worked out the plan shown in the photograph.

The exhaust he designed is in the form of a nozzle, much like that on our home vacuum cleaners. At the opening end the nozzle is 1 inch wide and the ends of the nozzle rest on the edge of the tank. This puts the air entrance right down to the solution.



This shows the vats with the hoods and ducts connected. Note the difference in the shape of the hoods. The third vat is running and the pull of the system can be seen in the flow of the fumes



The tanks are 6 and 7 feet long and 4 feet wide. When the fan is turned on, the rush of air into the nozzle draws the fumes and gases from the outside edges of the tanks into the center where the nozzle is. This is shown in the photograph, where one of the tanks is working. The movement of the fumes over the surface of the solution keeps the air above the tank pure and permits the workmen to carry on without any inconvenience or danger.

The system has also proved a valuable agent in overcoming moisture condensation common to such plants. Whereas in older installations moisture gathered heavily on the ceiling above the tanks, with the new installation this moisture is all carried out with the fumes and the ceiling is now dry enough to carry a coating of white paint.

The nozzles are all of different shape, their shape depending upon the conditions governing the carrying of the stack to the main duct. As can be seen, these stacks and elbows had to pass under, around and through a maze of conveyor lines, columns and beams of the floor system and other factory equipment. Where the stack could go through to the main line governed the shape of the nozzle. In all cases, however, the stack is slightly larger in area than the area of the nozzle with which it connects. This extra capacity is to take care of any losses in the system.

It was found that the position of the stack in relation to the nozzle made no difference. This might not have been true had a low capacity fan been hooked into the line. In this particular system a fan with a capacity of 2,000 cubic feet per minute provided the force to draw the fumes from the tanks. It was also found that where only one tank was used, the position of the nozzle with regard to the top of the tank had little effect and that the nozzle could be placed almost at one of the outside edges.

These hoods are built of galvanized iron, given a coating of acid resisting paint. Where the solutions are exceptionally strong, a creosoted

wood hood can be used to offset the chemical action of the fumes.

An interesting feature of this installation is the fact that all the sheet metal work was done right on the job. This procedure was necessary in the first place because of the difficult path of the stacks, and second, because the work could be done more rapidly on the job than in the shop.

The riser sections of the stacks and the elbows were planned, cut and fitted as the work went along. The connections to the main exhaust line were also laid out on the job. This eliminated any useless cutting and fitting such as might have occurred had the sections been cut and joined in the shop.

As can be seen, the main line picks up the fumes from both ends and carries them to the outlet section at about the center of the line. This is the section which shows as largest in the picture. The line exhausts into the open air.

This job is typical of the work Mr. Goethal is doing in the industrial plants of Milwaukee. The jobs call for skill in laying out the job and doing the cutting and fitting, but has proved to be a field where profits can be had by the contractor willing to pit his skill and knowledge against the job at hand. The field has also proved a field where good work leads to more work without regard to weather, or the ills common to outside sheet metal work.

## Ring Doorbells and Get Business

One of the most successful canvassers I know told of an experience that happened to him on one of his trips around, and I will pass it on here to show how easy it is to gain admission into a home of even the ugliest customer.

He said he walked up to the door with his satchel in his hand and rang the bell. The woman came to the door and said, "So you're another one of these peddlers! I can give you no time." "Madame, pardon, but I am not a peddler. Mr. Quality Dealer pays me good money for what I am doing. I have nothing to sell. I am here to help you. You see we are calling on all of our old customers in this part of the city and checking over their heating plants, also taking in other houses in the vicinity at the same time. I go into their basements, check over the chains, dampers, pipes, etc., and if I find any little thing that is wrong, I take my pliers out of my pocket and fix these little things while I am in the basement. If the job is too big for me to handle, I tell you about it and you can then get anybody you wish to take care of it."

"Well," said the woman, "if that is what you are doing, come right

in," and he was ushered into the basement. He got the information he was after and told the woman what condition her heating plant was in, and walked out with an order for cleaning and repairing in the spring. That is what you would call strategy in canvassing and is the only successful way. You see, there is no trick to it if it is *done intelligently*.

The largest firm of direct furnace installers in the country have figured that if they can open a branch store in a new town and the man in charge will canvass intelligently three hours a day, that branch will be successful and a paying proposition. The average is taken from all sizes of cities and towns and with every kind of competition.

If you have not been successful in selling quality heating plants in volume, you have only yourself to blame. Get over that canvassing complex. Turn over a new leaf. Be determined that you are going to be a leader and I am sure that the thoughts I have tried to leave with you will help you overcome one of the greatest obstacles in attempting to reach your objective. *It's worth a trial.*

JOE WORTH.

~ ~

This advertisement is typical of the more general ads which appear in the Asheville newspapers. The purpose is to call attention to the need for cleaning and to get prospects to call in for service. Notice that this service is offered without obligation

~ ~

## Furnace Cleaning

A telephone call will bring to your home one of our experts on heating problems and equipment. This service is rendered to you without obligation.

~

**HENRY M. BROWN, JR.**

*Fuel Service*

14 PAGE AVENUE

Phone 2167

## How H. M. Brown, Jr., Uses Advertising to Bring in Jobs of VACUUM CLEANING

WE have been hearing a lot of discussion at this year's conventions about furnace cleaning. We can say truthfully that in all this discussion we have not yet heard of any furnace man who gave the cleaning a fair trial and did not think it was a first class way to get business.

At the same time we have heard that the coal men are getting into the furnace cleaning business as a result of many complaints from their customers that the furnace and fuel were not performing satisfactorily. These coal men have ascertained that in about 80 cases out of 100 the fault is with a dirty furnace rather than with poor fuel or a poor installation of the heating plant.

These furnace men had to satisfy their customers, so they began to clean furnaces. A number of them, and the number is growing, have

found the business a good-will builder and a profitable sideline. Not very long ago we ran an article about a coal man who had made a remarkable success of clean-



Henry M. Brown, Jr.

ing furnaces. And we want to follow that story up with this one which gives the system worked out by Henry M. Brown, Jr., a coal service engineer in Asheville, N. C. We feel that the system worked out by Mr. Brown is remarkable. We feel that it could be well adopted by any progressive furnace man with good success.

Mr. Brown is now using two vacuum cleaners. "They have proven entirely satisfactory in every respect and our customers are delighted with the service we have given them," he declares.

Concerning the cleaning business, he says:

"We are not in the furnace or sheet metal business, yet we are in the furnace cleaning business and of course we have arranged with a local sheet metal and furnace company to furnish us with the repair parts that we must have to com-

Date.....

THE CLEANING OF MY FURNACE was

☐ very satisfactory   ☐ satisfactory   ☐ unsatisfactory

(Please give your opinion of our service by a X in one of the above squares)

I suggest that you improve your service by:.....

.....

Name.....

Address.....

After the cleaning job is completed the customer receives a card like this. Three classifications of satisfaction are provided for. Mr. Brown reports that so far every customer has checked the first classification—Very Satisfactory

plete the work that comes our way.

"Our business started as a service department that the local retail coal dealers could use to handle complaints on the fuel they sold. Of course there is only one thing as a rule that causes dissatisfaction with the coal or furnace and that is a dirty furnace.

"To properly clean the furnaces we purchased one Sturtevant portable vacuum cleaner and put it to work. The complaint business was not enough to keep this one machine busy, so we started a drive to get furnace cleaning business. In this drive we employed the newspapers, radio, direct mail,

**A Fuel Engineering Service**

**Henry M. Brown, Jr.**

FUEL SERVICE

Arcade Bldg. Phone 2167

These little ads are run in a weekly paper. In spite of their small size they pull inquiries

phone calls, and personal solicitation. This large amount of publicity released such a flood of business that it was necessary to purchase another cleaner so that we could handle the business.

"We have been very busy with the exception of a few slack days that will occur in any line. With

**Furnace Cleaning by Super-Vacuum**

**Henry M. Brown, Jr.**

FUEL SERVICE

Arcade Bldg. Phone 2167

And another small ad designed to keep the idea that Henry M. Brown, Jr., is a furnace cleaning specialist

the cleaning of furnaces of course there were the replacement of parts such as pipes and grates that had to be done, and to save the customer from having to call in another workman we made arrangements with a local furnace firm to furnish us with the repair parts that we would need. This connection is

**If your Furnace fails to give heat call—**

**Henry M. Brown, Jr.**

FUEL SERVICE

Arcade Bldg. Phone 2167

Here is another small ad designed to get the home owner wrestling with an unsatisfactory furnace

very satisfactory and we are well pleased that we do not have to carry the stock, as we have not the capital to go in the sheet metal business and we would be getting away from our original efforts in the line of combustion and boiler room equipment.

"About 50 per cent of the furnaces that we have cleaned are

**Keep Your Furnace Clean**

✓ No Coal Will Give Satisfaction in a Dirty Heater ✓

**THIS FURNACE WAS CLEANED**

Date .....

BY

**HENRY M. BROWN, Jr.**

**Fuel Service**

14 Page Ave.  
Arcade Bldg.

Telephone 2167

As soon as the furnace is cleaned the workmen tack this card in a conspicuous place near the fire door of the furnace. Its purpose is obvious. Sooner or later that furnace must be cleaned again. If the first job was satisfactory Henry M. Brown should get the next cleaning job. This card does the trick



FURNACE RECORD	
INLAND 18778	
Date	
Name	Owner
Address	Condition
Type Furnace	Serial Numbers
Manufacturer's Name	
Hand Fired	
Stoker Fired	
Oil Burner	
(Give Manufacturer's Name and Number)	
Fuel	Buys from
Remarks (OVER)	

These illustrations show two sides of a card which is filed in the office. On one side is a complete history of the furnace. Notice that fuel, condition, attention given the furnace are fully gone into. The reverse side has only two sections, but plenty of space is allowed for remarks regarding the furnace, its cleaning and what was done on it

warm air installations. The rest are water types. The warm air furnaces as a rule are the best for the repair part business. We generally have to replace the pipe or some insulation, etc. On the steam jobs as a rule there is nothing to fix, except the smoke pipe. But there is always the pipe on all jobs that as a rule will rot out in a short time, especially in a moist basement.

"We are fortunate in having a service manager who is very neat and careful with his work and the work of his men. When we clean a furnace it is clean, and so is everything else around it, including the basement. We paint the furnace whenever possible, and do the little things that the other firms do not think it pays them to do because it takes twenty minutes longer. They do the work for a dollar less than

#### General Remarks

#### Dates Cleaned

our cost but we get five jobs to their one, simply because we are known for doing the best work in

This is Mr. Brown's office with the coal analysis corner showing in the background



town and people pay a little extra for the extra work and that is really what they want. There is very little work to the actual cleaning—it's the cleaning up that is the work.

"Our men wear fresh, clean overalls and jacket coats on every job. The uniform is fresh every morning and when a man goes upstairs we do not have to sit and worry that Mrs. Blank will phone in and tell me what my man got dirty when he was cleaning the registers. We have not had a complaint out of the 275 furnaces that we have cleaned in the last three months.

"We started this three months ago. After the furnace is cleaned we write a letter (not a form letter) to every customer thanking them and making any recommendations that we see which may improve the furnace or save them money. We send a return card,

# Your Furnace

*Is It Ready for Use?*

**We clean heating plants in the modern way  
—by vacuum cleaner.**

**Our service is complete; we clean furnaces—  
hot air pipes—heatrolas—stoves—flues and  
chimneys.**

*Call us for an estimate.*

**HENRY M. BROWN**

*Fuel Service*

**Arcade Bldg.**

**Phone 2167**

This type of ad is run in the Sunday editions of the local papers. The text does not attempt to sell the whole cleaning idea in one ad. Through the continuity of the advertisements which are run from week to week, most local readers are familiar with the service—at least they know it is available

which most customers send back, giving their opinion of our work. Not one card has been returned marked anything except 'most satisfactory.'

Wherever a heating plant is cleaned a card is placed in the base-

ment on which is written the time of cleaning. This card in large type carries the statement, "Keep Your Furnace Clean. No Coal Will Give

owner so in the event they want service repeated before we get around to them again they know where to call us," he says.

A complete record of each plant cleaned is maintained. This gives the name and address of the home owner, the name of the furnace, serial number, condition, whether it is hand fired or stoker fired, the kind of fuel used, where they buy it, and place and date of cleaning.

This system is proving very helpful on repair work and also as a future record where repairs may be needed. These cards will be used in soliciting vacuum cleaning next next summer.

"Located in our office is one of the most modern and complete laboratories in the South for the analysis of coal. This service is used by the larger users that are now buying coal on an analysis basis. We are saving lots of money for our clients in this department. We also have a boiler testing department that is equipped with gas analyzers and gauges to determine the percentage of efficiency the boiler is

**A new servant for  
cleanliness.**

**Now is the time to take  
the overcoat off your  
furnace.**

**A new and clean  
method for an old and  
dirty job.**

**Our cleaning service  
pays for itself in fuel  
saving and satisfaction.**

**A service for cleaning  
heating plants, fired by  
coal or oil.**

**HENRY M. BROWN, JR.**

**FUEL SERVICE**

**TELEPHONE 2167**

**14 PAGE AVE.**

**ARCADE BUILDING**

This small ad costs little, but is packed with sales arguments. It fits one column of a paper

## THIS RETURN CARD ENTITLES YOU TO INFORMATION WITHOUT OBLIGATION

- ☐ You may call on.....(date)  
and clean my heating plant with your vacuum cleaner.
  - ☐ You may give further information  
regarding your service.
  - ☐ You may call and inspect my heating plant.  
This inspection is without charge.
- (Check the service in which you are interested)

Name.....

Address.....

Type of Heating Equipment.....

Direct mail is also used extensively. Here is a postal card the back side of which explains that an estimate call costs nothing, and to make the filling out easy lists three items to check. All the effort required by the reader is one pencil check and his signature

Satisfaction in a Dirty Boiler." Brown's name, address and telephone number is printed at the bottom of the card. "The purpose of this card is to keep our name and telephone number before the home

being operated at. This is a very important field of operations and lots of savings are being reported from clients.

"We are the exclusive distrib-  
(Continued on page 46)

# Rectangular and Round Pipe Intersecting Irregularly

**I**T is often found necessary in heating and ventilating work to develop patterns for the joining of rectangular and round pipes intersecting irregularly. The accompanying drawing shows a problem of this kind and the method of developing such a pattern.

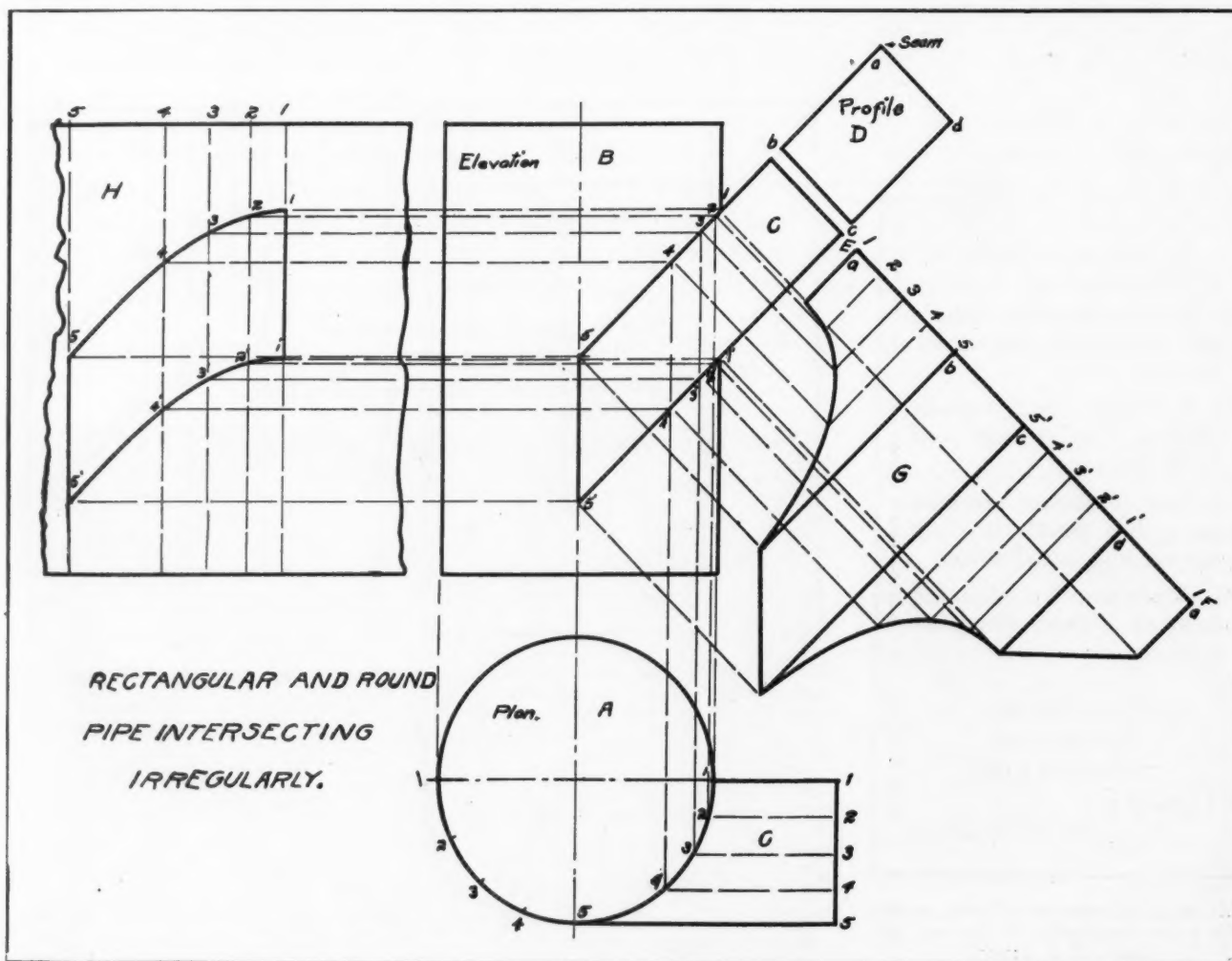
First draw the plan A and elevation B as shown in the illustration. The rectangular pipe C in this case is drawn on a 45° angle and the profile of the rectangular pipe is drawn at D. Before beginning the development of the pattern for the rectangular pipe C, it is necessary to divide it into any number of equal parts. In this case we have divided it into four equal parts and

**By L. F. HYATT**  
Contributing Editor

numbered these divisions as shown at C in the plan. From these points horizontal lines are drawn intersecting the circle in plan A. Then form these points of intersection are drawn perpendicular lines intersecting the 45° lines which represent the upper edge of the rectangular pipe at 1'-1, 2'-2, 3'-3, 4'-4 and 5'-5.

We are now ready to begin the development proper of the pattern for the rectangular pipe. Draw the stretchout line EF at right angles to the slope of the rectangular pipe C in elevation. Upon this line step off the four sides equal in length to

ab, bc, cd, and da in profile D. Next divide the two wide sides, which are the top and bottom side of profile D into four parts equal in length to the spaces previously stepped off in C in plan A, and number these points as shown in G. Now draw lines of an indefinite length from these points, parallel to the slope of C in the elevation. From points 1, 2, 3, 4, 5, in elevation B draw lines parallel with the stretchout line intersecting the lines of like number previously drawn at right angles to the stretchout line. Then from the points 1', 2', 3', 4', 5' in elevation B draw lines as before, intersecting 1', 2', 3', 4', 5' in pattern G. Now draw the curved





and straight lines through these points of intersection, describing the outline of the lower portion of the pattern G. In practical layout work where the pipes are large, it is of course necessary to divide the pipe into more than four spaces, as was done in the above case.

Space prohibited developing an entire pattern for the round pipe, but the opening on a small portion of the pipe is developed completely. To obtain the circumference of the pipe it is necessary to divide a quarter of plan A into any number of equal spaces, in this case four, and upon the stretchout line 16 spaces should be stepped off, determining the exact length of the metal necessary to make the round pipe. (No allowance for seam is made.)

Next, near the center on the top

line of H, which is a portion of the stretchout line, step off the spaces 1, 2, 3, 4, 5, found on the circumference in plan A. It is well to remember here that in any parallel line pipe intersection problem, regardless of the shape of the pipe, the portion of the pipe to be removed may be obtained from the points of intersection in the plan. From the points just stepped off drop lines at right angles to the stretchout line. Next draw horizontal lines from the points 1, 2, 3, 4, 5 in elevation B, intersecting the lines just drawn. Through these points of intersection draw lines as shown, describing the outline of the opening necessary for the joining of the two pipes. After adding the allowance for seams, etc., the pattern is complete.



## A Labor Recap Sheet for Quick Estimates

As competition becomes keener and jobs coming into a sheet metal man's shop more diversified, it is well to keep some record of labor costs.

This keeping of labor costs on jobs of different kinds or through different times of the year should be one form of bookkeeping every shop owner ought to give time to. The simpler this sheet is, the better. Also, the fewer the items entered, the less the work and the quicker the sheet can be used for reference.

A. H. Falkenhaimer of the Des Moines Sheet Metal Company, Des Moines, Iowa, keeps such a sheet and has kept one for several years. He thinks the sheet so valuable that he would not be without it. Not long ago he sent us a copy of a recent sheet with the suggestion that we publish it, and give other sheet metal men an opportunity to profit by his experience with it.

"The primary purpose of this recap sheet," says Mr. Falkenhaimer,

"is to check the various labor items on different jobs and to insure that labor is charged to the proper contracts and jobs. This applies particularly to the shop where one man may work on three or four different jobs during a single day.

"Since I began to use this sheet I have found it very useful. It has proved to be the simplest method of apportioning labor costs to jobs I have found."

The sheet is shown in the next column. The left hand column lists the employees by names. The headings across the top list the jobs going through the shop during the week the sheet is used. In this particular sheet, outside jobs are listed by a code number, while the shop time and incidental time are carried under separate heads.

The date is listed through the working days of the week down the side under the name of the employee. As he works on a job the time is entered by days from the

shop time cards. These totals for the day are carried across to the right and totaled. If the man works a full day the total should equal the number of hours worked a day in the shop.

The total time for each job is carried down and totaled by jobs, by days and these totals are then carried across to the right and totaled. This total should balance with the number of man-hours worked in the shop during the week.

The grand total at the bottom shows the full number of hours worked on all jobs and in all departments during the week for all employees. These grand totals are again carried across to the right and entered. This figure should balance with the payroll and time sheets of the paymaster.

When a job comes up, the sheet metal contractor can get out his recap sheets and quickly find out how much labor was required to finish a similar job. On this information he can accurately judge the cost of labor for the job he proposes to bid on.

LABOR RECAP						
Employee	Date	3045	3746	Shop	Sundry	Totals
W.H. Jones	1	4	1	✓	✓	4
	2	3	1	✓	✓	4
	3	2	3	✓	✓	8
	4	4	3	✓	✓	8
	5	5	✓	✓	✓	8
	6	5	✓	✓	✓	8
	7	7	✓	✓	✓	8
	Total	25	7	7	11 1/2	44 1/2
J.P. Smith	1	3	✓	✓	✓	4
	2	5	✓	✓	✓	8
	3	4	✓	✓	✓	8
	4	2	✓	✓	✓	8
	5	3	✓	✓	✓	8
	6	6	✓	✓	✓	8
	7	6	✓	✓	✓	8
	Total	23	7	7	7	44
W.R. Brown	1	2	✓	✓	✓	4
	2	6	✓	✓	✓	8
	3	3	✓	✓	✓	8
	4	5	✓	✓	✓	8
	5	4	✓	✓	✓	8
	6	3	✓	✓	✓	8
	7	3	✓	✓	✓	8
	Total	23	7	7	7	44
H.A. Green	1	3	✓	✓	✓	4
	2	3	✓	✓	✓	8
	3	2	✓	✓	✓	8
	4	4	✓	✓	✓	8
	5	1	✓	✓	✓	8
	6	8	✓	✓	✓	8
	7	✓	✓	✓	✓	8
	Total	24	12	7	8	44
Jim White	1	4	✓	✓	✓	4
	2	5	✓	✓	✓	8
	3	3	✓	✓	✓	8
	4	6	✓	✓	✓	8
	5	7	✓	✓	✓	8
	6	1	✓	✓	✓	8
	7	✓	✓	✓	✓	8
	Total	26	6	7	7	44
Force for week		121	56	23 1/2	40 1/2	220 1/2

This is the recapitulation sheet which Mr. Falkenhaimer has found easy to keep and so valuable he wouldn't be without it. You can copy it if you want to

# Converting An Old Heating Plant To a Modern Combination System

**T**HERE are, unfortunately, some people who look upon warm air heat as a cheap substitute for some other kind of heat.

If these people have all the money they want to put into a heating job, they specify some other type of heat as a matter of course.

There is no justification in comfort for such a frame of mind.

The well installed and properly designed warm air furnace will heat all the rooms in a house, it will not add any dirt or coal gas to the air, and in addition to these advantages, it will supply two essential

elements of comfort, namely, air circulation and humidity.

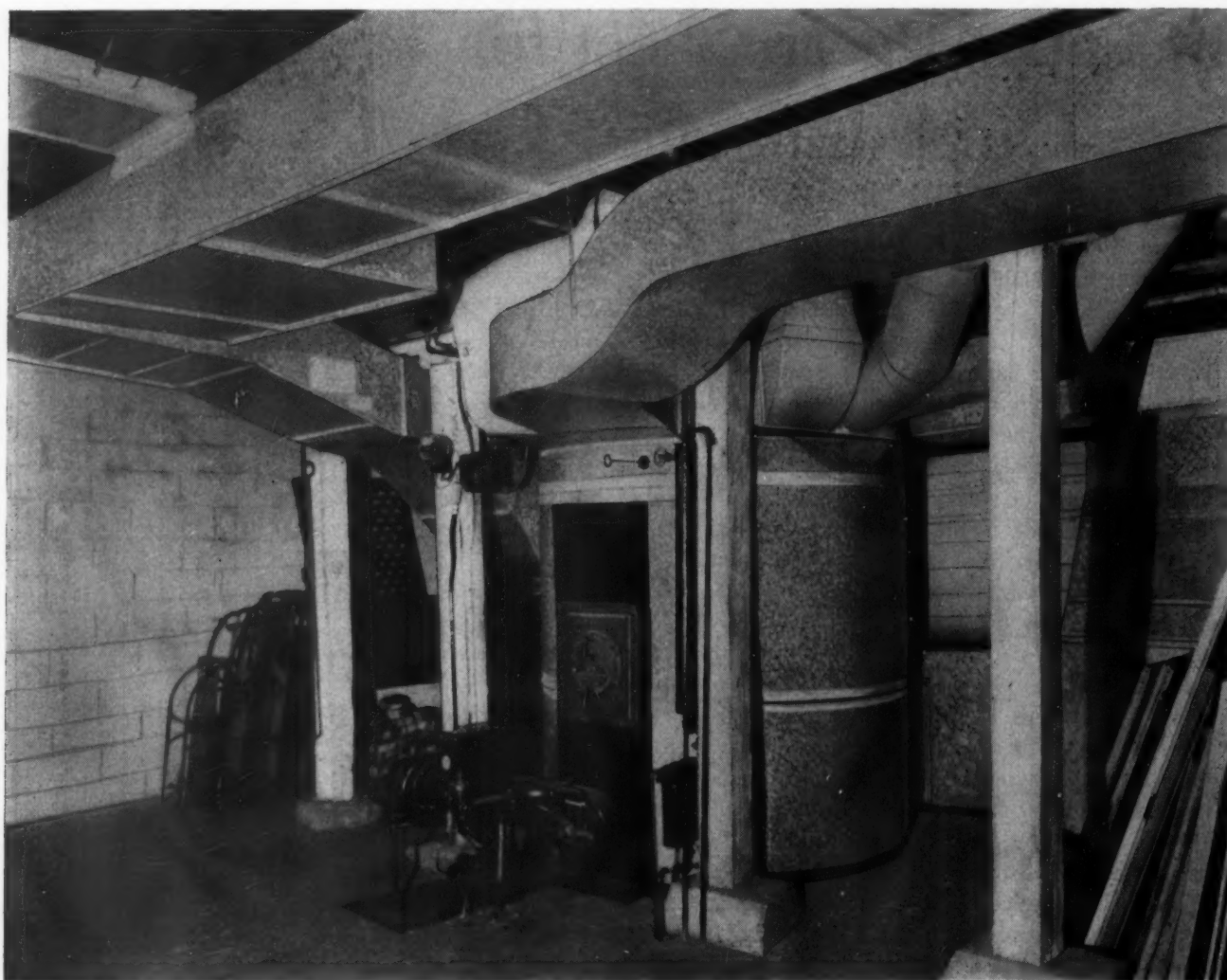
How many installers are selling furnaces and how many are selling comfort? Of course, if the installer insists on just selling a furnace, he will always find himself in the price competition class.

The only way to get away from cutthroat competition is to sell the consumer comfort. He does not want a furnace; he does not want to buy so many pounds of cast iron and galvanized steel. He wants to buy the kind of comfort that he has dreamed of. And comfort, true

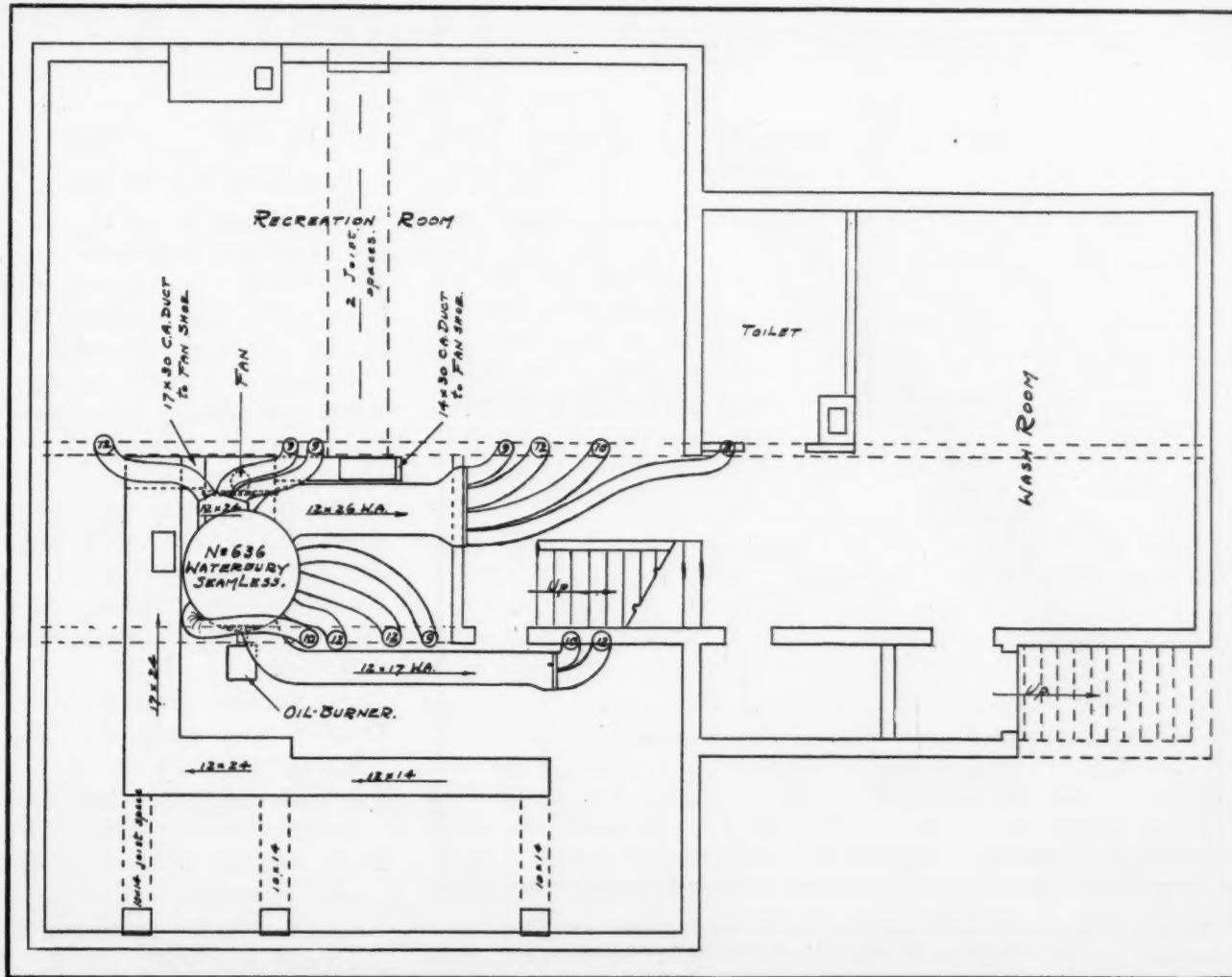
comfort, can be obtained with a well designed, properly installed warm air system.

On this page there are illustrations of the floor plan of an eleven room house with two baths and a heated recreation room in the basement. This house, owned by H. E. Young, Minneapolis, now has about as modern a heating plant as can be installed.

This house had been heated by an old combination system, and so in planning the job we used a combination furnace, using the old hot water radiators and supplying addi-



A view of the modernized heating plant. Notice the flat ducts which gave liberal headroom in the basement. The fuel used is oil

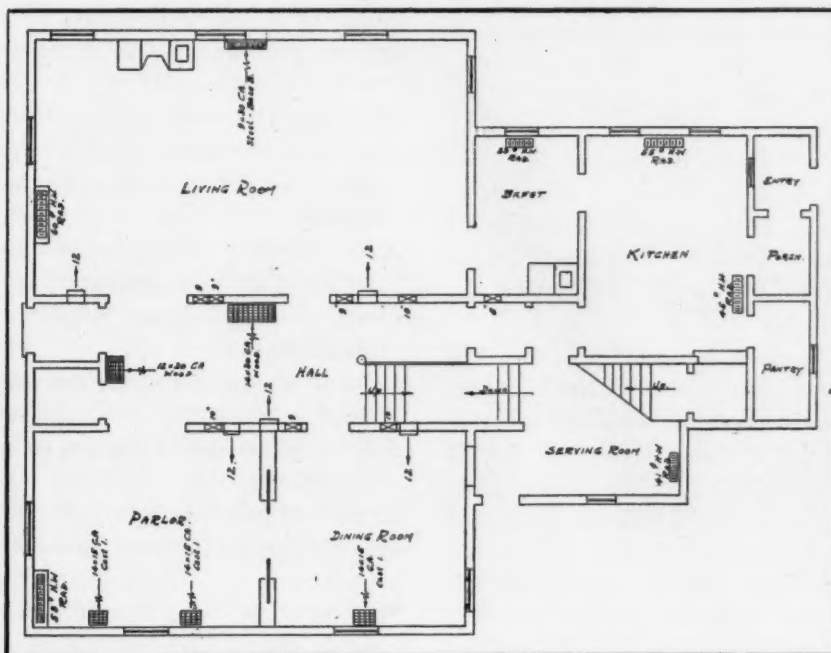


This is the layout of the heating plant. The flat ducts for return air are a feature. The big warm air lead spread to four branches in another unusual design.

tional warm air wherever necessary.  
To overcome the only possible ob-

jection against warm air heat,  
square duct work was used in the

larger part of the job and liberal  
basement headroom was thus se-  
cured.



This plan shows the five cold air faces and the radiators of the old system.

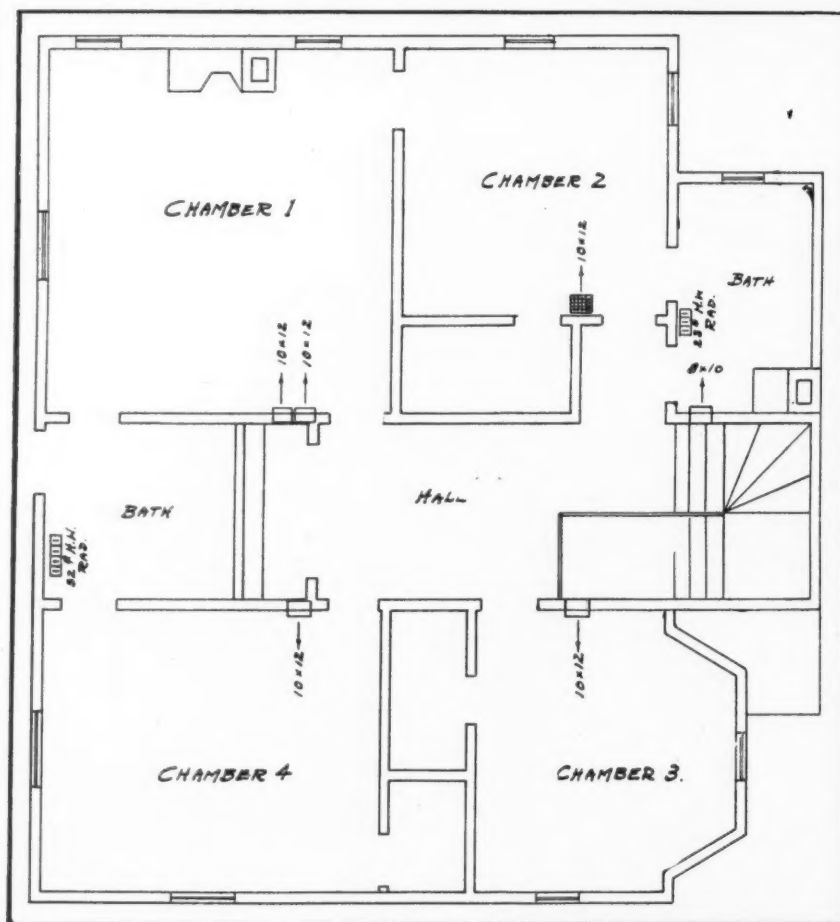
A No. 636 Waterbury Seamless Oil Burning Furnace was installed. Positive circulation was assured by the installation of a No. 800 3-speed Miles Furnace Fan, and the owner's comfort was further guaranteed by the use of an Electrol Oil Burner.

The accompanying photograph shows a part of the basement installation.

Temperature readings were taken by the occupant of the house at 3 p. m. on a day when the outside temperature was being forced down from 20 to 2 degrees above zero, with a strong northwest wind of 30 to 40 miles velocity.

These readings showed the following temperatures:





The plan of the second floor shows the wall outlets for warm air. The sizes of stacks and leads are given on the basement plan

Names of Rooms Reading at 3 p.m.

Hall	74
Living	74
Dining	74
Library	74
Kitchen	72
Bedroom No. 1	74
Bedroom No. 2	74
Bedroom No. 3	72
Bedroom No. 4	74
Bath No. 1	74
Bath No. 2	72

This job was equipped with full automatic humidifier, 3-speed fan, a furnacestat which cuts on the fan when the casing temperature reaches 175 degrees and which is also connected with the thermostat, so that the fan will cut off when the oil burner cuts off.

The owner was seriously considering hot water heat, but was sold the warm air furnace installation on the basis of comfort.

The representatives of the Electrical Oil Burner Company made a

test on the burner and reported as follows:

Stack temperature.....450 degrees  
CO<sub>2</sub> ..... 11 percent

This they considered a very high standard of efficiency, but not at all unusual when the combination of a good warm air furnace installation and a good oil burner is encountered.

There was no odor of oil either in the living rooms or in the basement, as the special construction of the Waterbury Seamless Furnace makes the escape of oil vapor impossible.

A close examination of the feed door arrangement on the oil burning furnace will reveal the fact that a special door is used on the oil burning furnace. This door is made tight by special locks and a gasket and a peek hole is provided, so that the flame can be viewed and adjusted without opening the feed door.

There are lots of \$1,500 jobs

waiting for the furnace dealer who dares to handle goods of quality and sell comfort rather than furnaces.

### How to Fail in Business

- Pay no attention to costs.
- Don't keep accurate accounts.
- Be discourteous to customers.
- Neglect your personal appearance.
- Be content with partial success.
- Run unnecessary risks.
- Worry over trifles.
- Be careless.
- Waste your spare time.
- Always knock your competitors.
- Avoid all public and social affairs.
- Buy only from "good fellows."
- Never admit you are wrong.
- Follow a hit or miss policy in advertising.
- Be erratic rather than systematic.
- Don't use modern office and store appliances.
- Meet your obligations only when forced to.
- Never study the methods of successful merchants.
- Always be "out" to salesmen.
- Don't plan your work.
- Be unfair to employees.
- Neglect your business education.
- Be easily discouraged.
- Be a confirmed pessimist.
- Be self-satisfied.
- Travel only the beaten paths.
- Never boost your community.
- Ignore the appearance of your store.
- Underrate your competitors.
- Don't use seasonable window displays, nor change them very frequently.
- Never permit your business to interfere with your pleasure.
- Never use the "dealer helps" of manufacturers.
- Have your store disorderly and unclean.
- Ask every customer: "Do you want something?"
- Regard all promises lightly.
- Believe the public must come to you.
- If at first you don't succeed, let it go at that.—*Electrical Merchandising.*

# Oil Burner Industry Pleased With First Consumer Show

**E**NGINEERS, manufacturers and salesmen who attended the seventh annual convention of the American Oil Burner Association, held at the Hotel Stevens during the week of April 7, carried home a distinct impression that this industry has passed the period of infancy and established itself as an important factor in American business.

It would seem that oil burners are approaching standardization. Experimentation has settled down and full automatization and perfection of machinery have made large improvements in servicing.

The models on display showed a marked tendency to dress up the domestic burner so that it will be a thing of beauty. Burners were exhibited finished in almost every color, including reds, oranges, yellows, greens and blues.

The Oil Burner Show, held in connection with the convention, was the first annual exposition thrown open to the public. The innovation proved a decided success, and exhibitors reported a large number of retail sales and a still larger list of prospects. Until this exposition settled the question, there was some doubt as to whether the consumer would flock to an oil burner show. Judging from the attendance here and from the satisfaction generally expressed by the exhibitors, the consumer show will sell oil burners as effectively as it sells automobiles. The average home owner approaches the purchase of a new heating plant, it seems, as carefully as he considers the purchase of a new car, and appreciates the opportunity, which an exposition gives, to compare the different models.

From an organization standpoint the convention showed that the industry has made great progress

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**If the Oil Burner Show is any indication of public interest, it is high time the warm air furnace dealer looked into the matter of selling burners. Just look this program over.**

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during the year. One of the evidences of the growth of the cooperative spirit was the announcement of the research program recently started at the Sheffield Scientific School of Yale University under the joint auspices of the American Oil Burner Association and the American Society of Heating and Ventilating Engineers. This research is in charge of L. E. Seely, assistant professor of mechanical engineering.

At the annual dinner, which was attended by nearly 800 representatives of all branches of the industry, Edwin M. Fleischmann, president of the May Oil Burner Corporation of Baltimore and retiring president of the association, declared that the oil burner manufacturers were following in the footsteps of the automobile builders, and that the oil burner show some day would outrival the New York and Chicago automobile shows.

The convention and the exposition were the first in which the oil companies have taken part. Two Chicago companies had booths at the show and expressed great satisfaction with the results. Several speakers referred to the importance of close co-operation by oil men and burner men.

Twenty-five thousand persons viewed the Oil Burner Show, of whom about nine hundred, according to a canvass of the exhibitors,

left their names and addresses at the various booths as prospective purchasers.

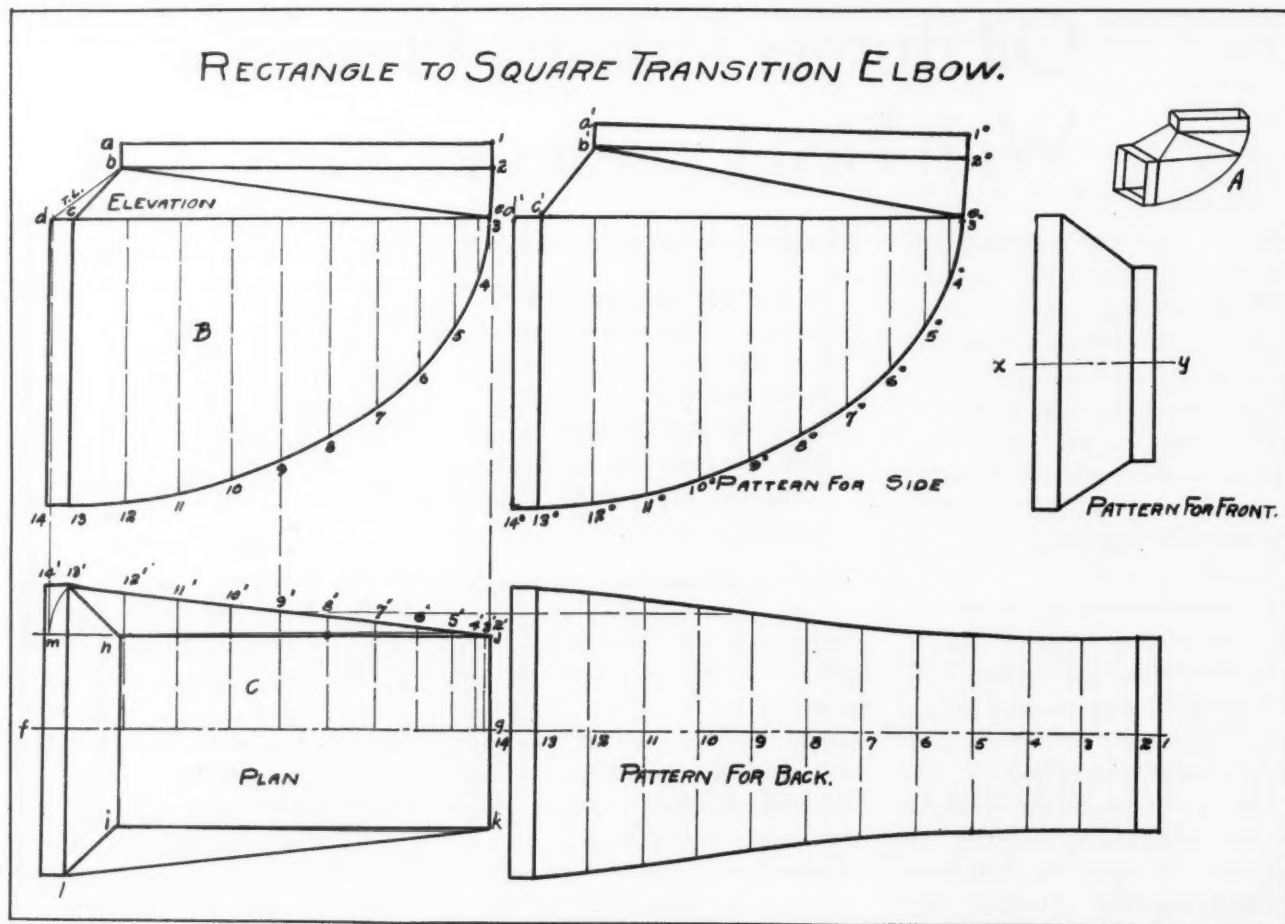
Officers of the American Oil Burner Association chosen for the ensuing year were:

President—Walter F. Tant, Silent Automatic Corporation, Detroit.

Vice-Presidents—H. Finnie, The Timken-Detroit Company, Detroit; W. J. Smith, Cleveland Steel Products Corporation, Cleveland; W. C. McTarnahan, Petroleum Heat & Power Company, New York; J. H. Hirsch, Automatic Burner Corporation, Chicago; W. F. Schroeder, Schroeder & Curry, St. Louis.

Executive Committee—W. F. Tant, E. M. Fleischmann, May Oil Burner Corporation, Baltimore; H. Finnie, J. F. Griswold, Hardinge Brothers Incorporated, Chicago; Earl Marr, Marr Oil Heat Machine Corporation, Minneapolis.

Directors—E. P. Bailey, National Airoil Burner Company, Philadelphia; R. S. Sherman, Silent Glow Oil Burner Corporation, Hartford; C. H. Chalmers, Chalmers Oil Burner Company, Minneapolis; J. C. Coonley, Jr., Winslow Boiler and Engineering Company, Chicago; L. A. Welch, Hart Oil Burner Corporation, Peoria; W. R. Busch, Electrol Incorporated, St. Louis; J. H. McIlvaine, McIlvaine Burner Corporation, Evanston; William Blake, International Burners Corp., New York; Meade Durbrow, Sundstrand Engineering Co., Rockford; W. M. C. Kimber, Sword & Kimber Company, Philadelphia; C. E. Campbell, Nu-Way Corp., Rock Island; H. W. Sweatt, Minneapolis Honeywell Co., Minneapolis; L. H. Van Ness, Mercoid Corp., Chicago; R. S. Bohn, Preferred Utilities Co., New York; L. L. Jacobs, New Jersey Electrol Company, Paterson, N. J.



## Rectangle to Square Transition Elbow

THE problem submitted for development is a transition elbow having one opening 16"x32" and the other opening at an angle of 90° to it, and 24"x24" square.

At A is shown a sketch of the elbow for which we have developed the pattern.

First draw the line A-1 equal in length to the length of the rectangular opening. Next drop lines from the points a and 1 and from these same points step off the distance desired for the width of the collar and connect the points b and 2 with the line b-2 completing the collar.

From point b draw the line b-c on a 45° slope; 4" below b draw a horizontal line of indefinite length intersecting the 45° line just drawn. Letter the point of intersection of these two lines c. Now from point c drop a line and step off upon this line a distance equal to one side of

By L. F. HYATT  
Contributing Editor

the square opening, in this case 24". Letter the point 13. From c and 13 draw lines at right angles to c-13 and step off on these two lines the desired width of the collar, as with the rectangular collar.

Now to insure an easy flow of air draw the curved line 2-13, any desired curve. Now step off on the curved line eleven equal spaces. This could be any number of spaces and should be more spaces if drawn full size. From each point on this curved line draw a perpendicular line intersecting the line d, c, e previously drawn.

Next draw the center line f-g of the plan, being careful to have it drawn far enough away from the elevation to avoid overlapping of the views. From points d, c, b, and

2 drop lines of indefinite length intersecting the center line, f-g. Step off on the lines drawn from b and 2 a distance equal to half the width of the rectangular opening, each side of center line f-g and letter the corners h, i, j, k as shown in the plan. Step off on each side of center line f-g, on the lines drawn from points c and d, a distance half the width of the large opening of the elbow.

Now from points h and i draw lines to 13' and l, also 13' to 2' and l to k, completing the plan. To get the pattern for the side next drop lines from points 2, 3, 4, 5, etc., locating points 2', 3', 4', etc. on the plan.

We are now ready to begin the development of the pattern. First extend the center line f-g indefinitely and upon this center line step off the distances 1, 2, 3, 4, etc., found on elevation B and through



these points draw lines of indefinite length. Now from the points 2', 3', 4', etc., on the plan draw horizontal lines intersecting the vertical lines just drawn, as shown by the horizontal line from 9' intersecting the vertical line through point 9. Another method quite common is to take the distances 2' to the center line, 3' to the center line, etc., in the plan and with the dividers set them off on the vertical lines of like number. After these points on the vertical lines have all been located draw the curved lines each side of the center line through these points, connecting the collars, thus completing the pattern for the back.

To develop the pattern for the side the line  $d-e$  of the elevation is extended indefinitely. Upon this line spaces are measured off equal to the spaces 14', 13', 12', etc., found on the plan. From these points draw lines of an indefinite length at right angles to  $d'e'$ . Next take the distances from the line  $d, e$  in the elevation to the numbers 14, 13, 12, etc., and step off like distances on the lines just drawn at right angles to  $d', e'$ . These distances locate the points through which the curve 14 to 2° is drawn.

It is necessary now to determine the true length ( $T. L.$ ) of the line  $c, b$ . To do this take 13' to  $h$  as a radius and with  $h$  as a center strike an arc intersecting the extended line  $j, h$  at  $m$ . Now draw a perpendicular line from this point intersecting the line  $dc$  of the collar in the elevation. The line drawn from this point to  $b$  and marked  $T. L.$  is the true length of the line 13'- $h$  in the plan or  $cb$  in the elevation represent the same line.

Next find the true length of  $be$  in the elevation. This is done as before. The fine line shown in the plan is used as a radius and an arc drawn intersecting the line  $hj$ . Then a line drawn perpendicular intersecting  $ce$  in the elevation and a line drawn from  $b$  in the elevation to this point will give the true length. The drawing here shows practically the same length of lines because the scale is so small. In the full size

drawing there will not be very much difference in the length of the  $T. L.$  line and the foreshortened line.

Now with the  $T. L.$  of  $c, b$  as a radius and  $c'$  on the pattern of the side as a center strike an arc and with the  $T. L.$  of  $b, e$  as a radius and  $e'$  of the pattern of the side as a center strike an arc intersecting the arc just drawn, locating  $b'$ . Strike the arc from point 3° in this pattern using distance 3-2 of the elevation as the radius; then with the length of the collar  $b, 2$ , from the elevation as a radius strike an arc intersecting the arc just drawn, completing the triangle  $b' 2° e'$ . From points  $b'$  and 2° draw lines perpendicular to the line  $b' 2°$ . Step off on these two lines distances equal to the width of the collar.

Connect these two points, completing the pattern for the side.

To draw the pattern for the front first draw the center line  $xy$ . Upon this line step off the distances  $d$  to  $c$ , and  $T. L.$  of  $c$  to  $b$  and  $ba$ . These distances are marked with the letters  $T. L.$  and  $bd$  and  $ba$ . Through these points draw perpendicular lines. On the first and second perpendicular line step off on each side of the center line a distance equal to half the width of the large opening. On the third and fourth perpendicular lines step off on each side of the center line a distance equal to half the width of the rectangular opening. Connect these points. This completes the pattern. No allowance has been made for seaming the pieces together.

## Little Leads to Business

It ought to be a part of every sheet metal contractor's sales plan to be on the lookout for little business getters.

For the benefit of those who haven't thought of this one we pass on the idea of a lawn mower sharpener.

Not long ago we were visiting a sheet metal shop and in looking over the equipment noticed a machine we didn't recognize. "What's that," we asked. "A lawn mower sharpener," we were told. "And what do you do with it," was our next query.

This is what we were told.

Several years ago when this man began business, he decided that he would specialize in the small jobs, or to be exact, the home and small shop field. Just how to get his shop before the people of the town was a problem. One day a neighbor brought in a lawn mower and wanted to know where he could get it sharpened. The sheet metal man said leave it and he would have it sharpened.

He bought an inexpensive sharpener and did the job. Then he sent

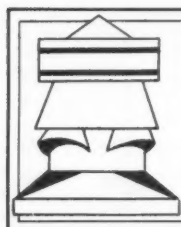
out notices that he would sharpen mowers.

One job led to another. One neighbor told another and the shop got so busy, the contractor hired a man in the summer months to run the machine. Both man and machine more than paid their way.

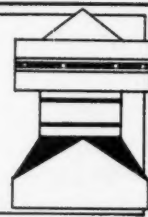
But this was not the reason the machine was put in. Every customer who came in naturally looked over the shop. Most of them asked questions. Gutter and downspout work, roof repairing and new roofs were talked up at every opportunity. New homes were discussed and remodeling was used as a wedge to sell sheet metal jobs.

Probably not many sheet metal contractors have a lawn mower sharpener. Perhaps they couldn't make one pay if they did. But the idea is that nothing should be overlooked especially when the contractor is operating a field like the one described. Perhaps some other piece of equipment can bring customers to your door and customers at the door are what every man in business needs lots of.

Don't overlook the cards at the left end of the row in your hand.



# GRAVITY EXHAUST VENTILATION



## The Ventilation Problem Analysed

**I**N the last issue of *AMERICAN ARTISAN* we published an outline of a ventilating problem which had stumped one of our readers. Full details were given.

Here follows the problem as it was originally sent in to us. We also show the layout.

The building is on a southeast corner, the north and west sides facing intersecting streets, and being solid show windows of plate glass running from 12 inches above the floor to 24 inches below the ceiling. Above the show window are glass fixed transoms.

These windows sweat so badly that water runs down onto the floor. This is what the owner wants to cure.

The building is one-story with basement. No roof space to amount to anything.

The owner wants to know whether or not ventilation will solve his problem. The heat is *insufficient* as it is, but there is a hot water coil in the basement from which the heat is now wasted. How will *ventilation* affect the heating? Can the waste heat from the hot water coil be used.

As we said before we immediately were confronted with conditions not quite common. We sent the problem on to Mr. Jordan and got back the following:

The condensation problem brings out the necessity of a careful survey of any ventilating problem, so my answer for the present will consist of some questions.

1. What kind of heating system have they? Heating, condensation and ventilation are all re-

**By PAUL L. JORDAN**

*The Paul L. Jordan Company  
Indianapolis, Indiana*

lated, and the kind of heat may throw some light on the cause, and will certainly affect the solution.

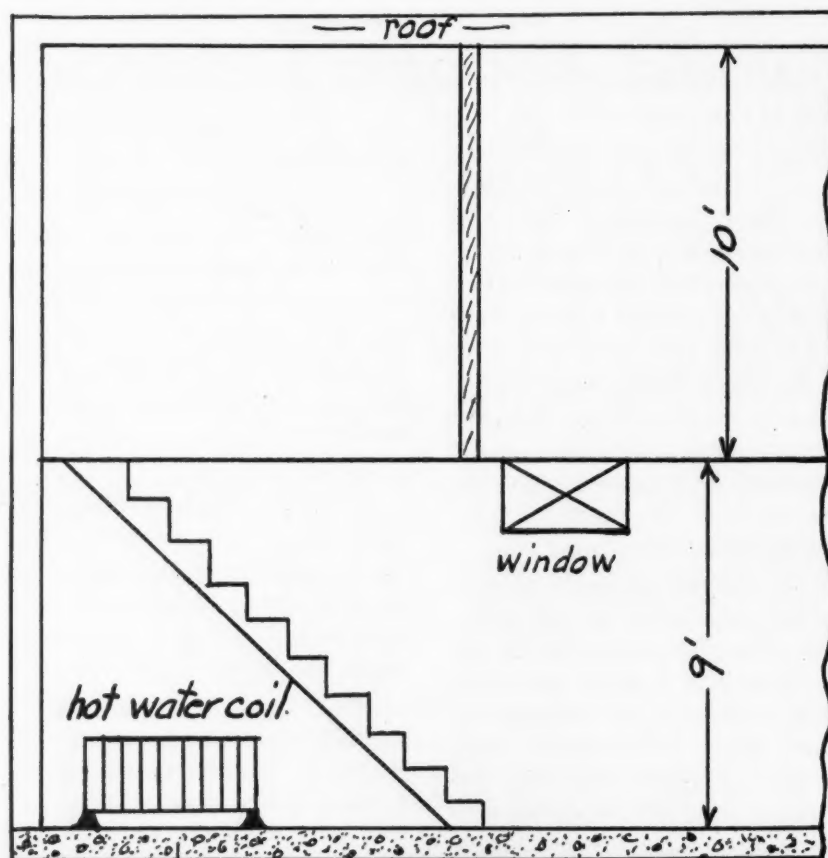
2. Are the show windows closed off or do they open into the room?

3. What is the room used for?

4. Is there anything in the room that throws off moisture into the room?

5. Are the cellar sash fixed or can they be opened?

6. What is the purpose of the hot water coil, shown in the basement? If this is an extra coil it may be utilized. If it is for basement heating, it will have to be handled in conjunction with the basement conditions. Surrounding it with a hood and drawing air over it to be blown into the room above could only be done if its heat is not necessary to the basement. On the other hand if this is a metered steam job and the coil is for the purpose of cooling the condensation before it reaches the meter, then it had better not be tampered with.



This shows the heights of the basement and first floor. The stairs are enclosed in a small room on the first floor, but are open in the basement. The hot water coil is located under the stairs and its heat is now wasted. No provision is made for utilizing this heat

7. Is the ceiling or roof insulated? Why is the heating now insufficient?

8. Is there at present any ventilation?

9. What is the floor temperature in cold weather. Do you know what the ceiling temperature is compared to the floor temperature? This will give us an idea as to whether ventilation will help or hurt the heating.

10. Is condensation present all the time or only in certain kinds of weather. When are conditions worst, and when are they best?

11. Can either fans or gravity be used for ventilation?

As a result of these questions we now publish their answers, or in other words we are doing as a good detective would—sorting out all the factors which have a bearing on the problem. Here are the answers:

1. They have steam heat bought from a central power station.

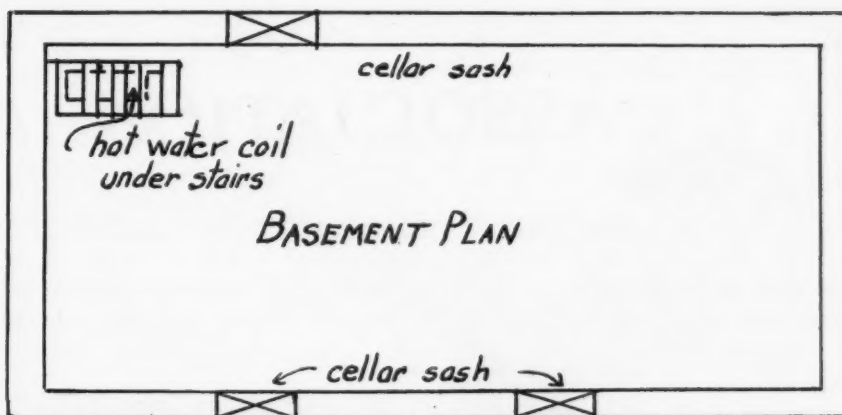
2. The show windows are in the room proper; they are not partitioned off.

3. The room is occupied by a furniture store.

4. There seems to be nothing that throws off any moisture into the room.

5. The cellar sash can be opened.

6. The hot water coil is a cool-



This is the floor plan of the basement. Three windows placed high above the basement floor provide light and air. The only other opening is the stair well which is enclosed in a small room on the first floor. The hot water coil stands well under the stairs. The foundation walls are all concrete. So is the floor

ing coil to cool the condensation before it reaches the meter.

7. There is no insulation apparent on the roof or ceiling.

8. There is no ventilation outside of door ventilation for the ground floor and cellar sash ventilation for the basement.

9. According to the report of a heating man who took ceiling, floor and intermediate temperatures on a day showing an outside temperature of 10 degrees above zero, the floor temperature in the center of the room was 65 degrees, the ceiling temperature was 72 degrees and the intermediate temperature, taken about five feet above the floor, was 70 degrees.

10. Condensation is bad only in cool weather. The colder the

weather the worse the condensation.

11. Either fans or gravity can be used for ventilation.

Let's now analyze the problem and its contributing factors. Following is how Mr. Jordan works out the analysis:

#### Consideration of the Problem

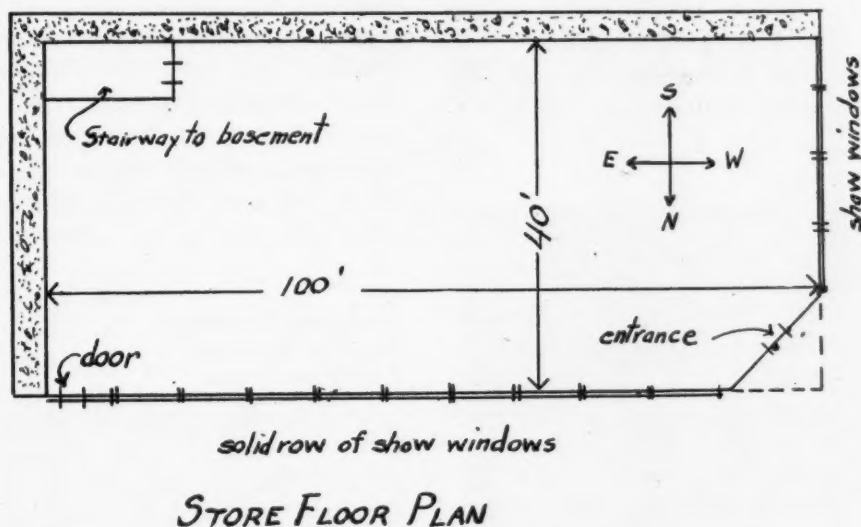
1. Referring to question number one and its answer. It is evident that this is a direct heating job with no circulation of air other than that caused by the aspiration of the radiators. This gives as nearly a stagnant air condition as is possible. Air circulation will be of help in curing condensation.

2. If the windows were closed off, as show windows usually are, then it would be a simple matter as only that small area would have to be considered. Ordinarily ventilation of the show window space would accomplish the desired results without interfering with the heat in the main room. However, with the layout as it is, the entire room will have to be included in whatever is brought about.

3. The fact that the room is used for a furniture store does not throw any light on the subject, excepting to show that the use of the room has no bearing on the condensation, although it does emphasize the necessity of getting rid of it.

4. The fact that there is nothing in the room to throw off moisture

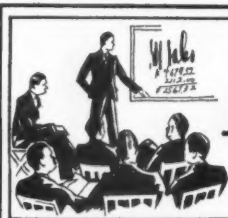
(Continued on page 46)



STORE FLOOR PLAN

This shows the floor plan of the first floor. Both the front and the long side are solid rows of large show windows which extend from 12 inches above the first floor to within 24 inches of the ceiling. Fixed transoms are above the windows





## ASSOCIATION ACTIVITIES

### N. A. S. M. Contractors Announce Program for 1930 Convention

The National Association of Sheet Metal Contractors have now gotten their program for the 1930 annual convention outlined and assigned. The meeting is to be held June 10, 11, 12 and 13 in the Fort Pitt Hotel, Pittsburgh.

The program is as follows:

#### Monday, June 9

Meeting of Board of Directors and Trade Development Committee.

#### Tuesday, June 10

*Morning Session—10:00 A. M.*

Opening of Convention by Louis Luckhardt, Chairman of Convention Committee.

Address of Welcome—Hon. Chas. H. Kline, Mayor, Pittsburgh.

Response—J. E. Merrick, National President.

Appointment of Committees.

Report of Officers.

Report of Board of Directors.

*Afternoon Session—1:30 P. M.*

Report of Uniform Mechanics Lien Law Committee, Otto Geussenhainer, Chairman.

Report of Allied Construction Industries Committee, A. J. Wagner, Chairman.

Address—Your Future Business, D. M. Strickland, Manager Development Section, Sales Department, American Rolling Mill Co.

Report of Vocational Education Committee, Louis Luckhardt, Chairman.

Address—Bringing Up the Reserves in Industry, Arthur C. Jewett, Director, College of Industries, Carnegie Institute of Technology.

Report of Trade Relations and Policy Committee, W. C. Markle, Chairman.

Address—Triple Play in Business,

L. I. MacQueen, Executive Manager, Credit Association of Western Pennsylvania.

#### Wednesday, June 11

Warm Air Heating Session.

Report of Warm Air Furnace Committee, E. H. Riesmeyer, Chairman.

Address—Relationship of Your Association and Ours, I. L. Jones, Chairman, Better Business Committee, National Warm Air Heating Association.

Address—Benefits of Inspection System for Warm Air Furnace Installations, H. L. Ley, Superintendent of Building Inspection of Pittsburgh.

Address—Re-Conditioning Air Systems (Speaker not assigned, 4-26).

Address—Merchandising Warm Air Heating, Jack Stowell, Special Representative, National Warm Air Heating Association.

#### Thursday, June 12

Report of Accident Prevention Committee, A. B. Rysdon, Chairman.

Report of National Councillor to Chamber of Commerce of the U. S. A., John A. Pierpoint.

Report of Overhead Expense Committee (Blackboard Demonstration), M. F. Liebermann, Chairman.

Address—Better Business Management—Accounting Systems, Job Cost Records, Overhead Expense, etc., Frank C. Park, Manager, Trade Associations Service Co.

*Afternoon Session—1:30 P. M.*

Report of Trade Development Committee, George Harms, General Chairman.

Address—The General Sheet Metal Shop, Edwin A. Scott, President, E. A. Scott Publishing Co.

Address—Tin Roofing—At a Profit,

George F. Hartman, Sales Engineer, Follansbee Bros. Co.

Report of Related National Associations, J. J. Hession, Jr., Chairman.

#### Friday, June 13

Report of Labor Committee—George Thesmacher, Chairman.

General Discussion of Labor and Related Subjects.

Report of Resolutions Committee.

#### Entertainment

Tuesday afternoon—Ladies will visit H. J. Heinz plant.

Tuesday evening—Moving pictures showing processes of making steel, ingot iron, copper, brass and monel metal sheets and products. Pictures will be shown in the Gold Room of the Fort Pitt Hotel and music will be provided.

Wednesday morning—Shopping parties for ladies.

Wednesday afternoon—Automobile tour and visit to Carnegie Tech.

Wednesday evening—Theater party for ladies with buffet lunch after theater. Moving pictures, smoker and buffet lunch at Keystone Athletic Club for the men.

Thursday—Luncheon and card party at Gypsy Tea Room for the ladies.

Thursday evening—Annual Banquet with Bennett Chapple as Toastmaster and Douglas Malloch, "The Poet Who Makes Living a Joy," as speaker.

### Cleveland Furnace Dealers Organize New Association

On Thursday evening, March 13, furnace dealers installing probably 75 per cent of the furnaces in Cleveland met and formed the Authorized Moncrief Furnace Dealers Association. In spite of its name, not all the dealers in the association

handle Moncrief furnaces.

The pledge of every member of the Association to install strictly according to the Standard Code applies without qualification to all new house work. An old house job, on



H. S. Sharp

account of the peculiar condition that has existed in Cleveland, may be installed without the cold air return, but otherwise up to Code specifications.

The details of organization were worked out by a committee of representative dealers. The situation which exists in Cleveland can be remedied by no half-way measures.

Much of the credit for the formation of the new association is due to the Henry Furnace and Foundry Company. About ten years ago this company began a campaign of advertising in Cleveland papers and has maintained the campaign uninterruptedly since.

The affairs of the Association are directed by a board of eleven governors, elected by members. From among the governors, the following officers were elected: Fred Wheatcroft, of Wheatcroft & McFadden, president; R. H. Roberts, of the Roberts Furnace Co., vice-president; Arthur Dory, of Dory & Hurd, treasurer.

The following, together with the officers, comprise the Board of Governors: Robert C. Dean, Ed Tucker, Robert Rosnell, A. L.

Cornwall, J. E. Washburn, Louis H. Torren, Leo Troegle, Louis Siebenhaar.

#### Chicago Ladies' Auxiliary Holds Peppy Meeting

One ladies' auxiliary that continues to function and show real life is the Chicago Ladies' Auxiliary of the National Association of Sheet Metal Contractors.



Fred Wheatcroft

With Mrs. Albert J. Wagner, the newly elected president in the chair, the meeting held Thursday, May 8, at the Midland Club, which was preceded by luncheon, was short and to the point.

When asked whether they would attend the Pittsburgh convention next month, the answers were all the same—"If my husband goes, I'll go"; so if any of the Chicago ladies are missing at the convention, it won't be their fault.

#### Indiana Sheet Metal and Warm Air Heating Men Hold District Meeting

Members of the Indiana Association from Indianapolis, Ft. Wayne, Huntington, Marion, Wabash, Mun-



Arthur Dory

cie, New Castle, Elkhart and other towns held a very successful district meeting at Huntington on May 2.

W. H. Hobson spoke on "Overhead," and Lee Hartzell talked on the "Standard Heating Code."

Mr. Triggs of the Majestic Furnace Company, who is president of the National Warm Air Heating Association, also spoke briefly on "Warm Air Heating," and on behalf of the Huntington local welcomed the visitors.

The afternoon was spent in going through the Majestic Furnace Company plant.



Indianapolis Sheet Metal and Warm Air Heating men who made trip to district meeting at Huntington, Indiana

# RANDOM NOTES AND SKETCHES

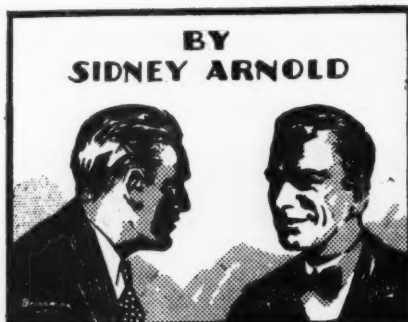
Fortune smiles on the readers of *AMERICAN ARTISAN* this issue in being able to print the photograph of this charming young lady. This bit of feminine pulchritude was officially known as Miss Dowagiac in the Blossom Festival held at Benton Harbor, Michigan, a week ago. To her townspeople she is known as Miss Velma Lason and to her business associates at the Premier offices in Dowagiac she is known as a mighty sensible as well as comely sort of person with whom it is a pleasure to work.

Miss Lason was chosen from among the town's beauties to repre-



Velma Lason

sent Dowagiac during the week of the Blossom Festival, a yearly event in Southern Michigan which reaches its climax in a gigantic blossom parade the last day of the week. Twenty-nine cities of Southern Michigan sent their beauty entries from among whom the Blossom Queen was selected as a starter of the week's festival. Miss Dowagiac was one of the three final survivors of the elimination contest, no mean honor in itself.



More definitely Miss Dowagiac is 5 feet 3 inches in height, a brunette and the possessor of a winsome sort of beauty that has an attraction to beholders of all ages. At the Premier offices she has been dubbed "Miss America," which is an index as to just how much they are believers in her. Her fan mail is increasing by leaps and bounds, but her parents open it, so be careful of what you write.

\* \* \*

During the Illinois Sheet Metal Contractors convention held last month in Springfield Johnny Maier, sheet metal contractor of Chicago Heights, Illinois, was appointed chairman of a special committee to increase the sale and distribution of the National Association's big book, *Standard Practice in Sheet Metal Work*.

Johnny is thoroughly sold on the value of this book both from the standpoint of showing the contractor the best way to do the various kinds of work and as a means of increasing the use of sheet metal when in the hands of the architect. In a talk he made to the members of the Sheet Metal employers of Chicago at a recent meeting he told

just how this book is enabling the architects to specify more sheet metal work. He did such a good job that six of the members present bought twenty-two books.

\* \* \*

One would think that George Harms would be ready to sit back and rest now that the National Association's big book *Standard Practice in Sheet Metal Work* is in print. However getting the book written, compiled and printed does no one any good until sheet metal contractors and architects throughout the country use the valuable material between the widely separated covers.

And so George is still on the job helping to get the book in the hands of the men for whom it was prepared.

At the request of Johnny Maier of Chicago Heights, George came up to Chicago the other day where both of them met with members of the staff of *AMERICAN ARTISAN* to discuss ways and means of increasing and speeding up the distribution of the book in Illinois. George is well pleased with the results Johnny has gotten so soon after taking on the job and he showed his appreciation by setting to work in his shirt sleeves as soon as he got in the *AMERICAN ARTISAN* conference room.

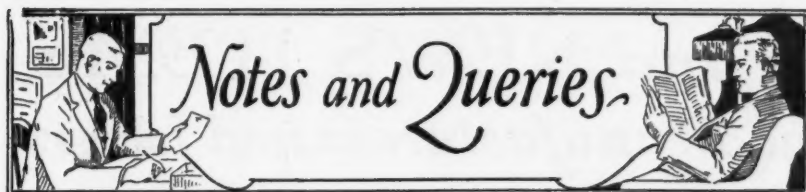
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Ray S. Ball, of Huron, Ohio, in sending in a subscription renewal (you all can take this as a hint if you want to) says "I like the *ARTISAN* very much. The ideas I get from it are very helpful."

Now there's a man after our own heart. We try to publish the paper so that it will help get business and settle problems.







### Fibre Washers

From Radio Units Company, P. O. Box 84, Salt Lake City, Utah.

We should like to know who makes fibre washers up to  $\frac{3}{4} \times 1\frac{1}{2} \times \frac{1}{8}$  inches thick?

Ans.—Quadrige Manufacturing Company, 213 West Austin Avenue, Chicago, Illinois.

### Steel Hot Water Radiators

From Doty and Dykstra, Evart, Michigan.

Can you tell us who makes steel hot water radiators?

Ans.—Shaw-Perkins Manufacturing Company, Oliver Building, Pittsburgh, Pennsylvania, and Kerrihard Company, Red Oak, Iowa.

### Automatic Underfeed Stokers

From Fram Heating and Spouting Company, 23 Broad Street, Newton Falls, Ohio.

Will you kindly send me the names of manufacturers of automatic underfeed coal stokers with automatic control?

Ans.—Domestic Stoker Company, 7 Dey Street, New York City; Ever Ready Coal Burner Company, 209 East Baltimore, Detroit, Michigan; Fire-King Stoker Company, 1160 Roosevelt Road, Indianapolis, Indiana; Germer Stove Company, Erie, Pennsylvania; Iron Fireman Manufacturing Company, Portland, Oregon; Motor Stoker Corporation, 250 Park Avenue, New York City; Phantom Stoker Sales Corporation, 1231 Hanna Building, Cleveland, Ohio; Superior Stoker Corporation, 4206 North Union Boulevard, St. Louis, Missouri; Thomas Stoker Corporation, 5906 Park Avenue, Cleveland, Ohio; Uniflow Stoker Co., Sidney, Ohio.

### Buyers for Galvanized Scrap

From J. F. Mulcahey, 3633 Delaware Street, Gary, Indiana.

I have a large quantity of scrap

to dispose of. Where can I sell it?

Ans.—Argo Iron and Metal Company, Elston and North Avenues; Gordon Brothers Iron and Metal Company, 118 North Curtis Street; Invader Metal and Iron Company, 4620 West Roosevelt Road, and Security Iron and Metal Company, 258 North Talman Street, all of Chicago.

### Glowers for Gas Wall Heaters

From Nu Idea Stand Company, Kokomo, Indiana.

Who makes glowers for gas wall heaters?

Ans.—Welsbach Company, 629 Washington Boulevard, Chicago, Illinois.

### Small High Pressure Boiler

From George R. Baker, 414 North Second Street, Alpena, Michigan.

Can you tell me who makes a small high pressure boiler about 3 or 4 feet long, 18 or 20 inches in diameter, to stand pressure 30 to 35 lbs. This is to burn soft coal or wood and is to be used in a small milk dairy for sterilizing milk bottles?

Ans.—Herbert Boiler Company, 140 Root Street, Chicago.

### "Stewart" Cast Iron Boots

From National Retail Hardware Association, 915-935 Meyer-Kiser Bank Building, Indianapolis, Indiana.

Will you please tell us who makes "Stewart" cast iron boots for rain-water leaders?

Ans.—O. S. Stewart Company, 923 Maud Street, Cleveland, Ohio.

### Used 4-Foot Brake

From Corinth Machinery Company, Corinth, Mississippi.

Where can we secure a good used 4-foot brake?

Ans.—Interstate Machinery Company, 601 West Monroe Street, Chicago, Illinois.

### "Star" Ventilators

From C. G. Hussey and Company, North Jefferson Street, Chicago, Illinois.

Can you tell us who manufactures the "Star" ventilators?

Ans.—Merchant and Evans Company, Philadelphia, Pennsylvania.

Address of Allen Air Turbine Ventilator Company

From John W. Thomson Sheet Metal Works, 5951 South Ashland Avenue, Chicago, Illinois.

Please tell us where the Allen Air Turbine Ventilator Company is located.

Ans.—14th and Howard Streets, Detroit, Michigan.

### "Fosco" Ventilators

From Sunbeam Heating and Sheet Metal Company, 125 West 111th Street, Chicago, Illinois.

Can you tell us who makes the "Fosco" ventilator?

Ans.—F. O. Schoedinger Company, 322 Mt. Vernon Avenue, Columbus, Ohio.

### "Combustioneer" Stoker

From C. L. Epps, 229 North Washington Street, Van Wert, Ohio.

Where can I get full information regarding the "Combustioneer" automatic coal stoker?

Ans.—From the manufacturers, Combustioneer, Inc., 1829 South 55th Avenue, Cicero, Illinois.

### "Monitor-Caloric" Furnaces

From A. A. Roberts, 211 South Lafayette Street, Macomb, Illinois.

Will you please tell me who makes the "Monitor-Caloric" furnaces, as I should like to secure repairs for them?

Ans.—Marshall Furnace Company, Marshall, Michigan.

### Venetian Porch Blinds

From J. H. Bedford, Bridgeport, Illinois.

Can you tell me who makes Venetian porch blinds?

Ans.—H. B. Dodge and Company, 332 South Michigan Avenue; Mackin Venetian Blind Company, 326 West Madison Street; W. L. Van Dame Company, 820 Tower Court; all of Chicago.

### "Liberty" Oil Burner

From E. I. Kalberer Sheet Metal Works, 1705 Charles Street, Lafayette, Indiana.

Can you tell us who manufactures the "Liberty" oil burner?

Ans.—Liberty Oil Burner Company, Lincoln, Nebraska.

## NEW ITEMS *and* NEWS ITEMS

### *From and about the Manufacturers and Jobbers*

#### **Charles J. Biek Becomes General Manager of Rudy Furnace Company**

**W**HEN the Rudy Furnace Company was organized in 1915, A. E. Rudolphi, the founder, gathered around him men with practical experience to head each department. For many years it was Mr. Rudolphi's proud boast that he had surrounded himself with executives who could carry on the business during his absence.

At the annual meeting of the stockholders and directors held on April 12, 1930, Charles J. Biek was named general manager of the Rudy Furnace Company, confirming the temporary appointment made at the time of Mr. Rudolphi's death.

Mr. Biek was one of the founders of the Rudy Furnace Company, and has been identified with the company as an officer since its or-



Charles J. Biek

ganization. He was the first secretary and advertising manager of the company, and since 1920 has been serving as vice president and manager of sales.

Mr. Biek was born in Dowagiac, and received his education in the local schools, specializing in business administration. Prior to the organization of the Rudy Furnace Company he spent six years in the office and furnace sales departments of the Beckwith Company. Entering the furnace field immediately on leaving school, Mr. Biek has been identified with the warm air industry for twenty-one years, and enjoys a wide acquaintance with the furnace trade, having made it a point to spend several months away from the office every year visiting furnace dealers in various parts of the country.

Mr. Biek has always been keenly interested in furnace construction, and many of the improvements which have been made in the Rudy line from time to time were developed by him. This close contact with the field has always been a Rudy policy and to this policy is due the constant improvements in the company's line.

Over five years ago Mr. Biek and his associates in the Rudy Furnace Company began the development of the gas furnace, which was presented to the trade last year under the name "Rudy Bon-Air Heater."

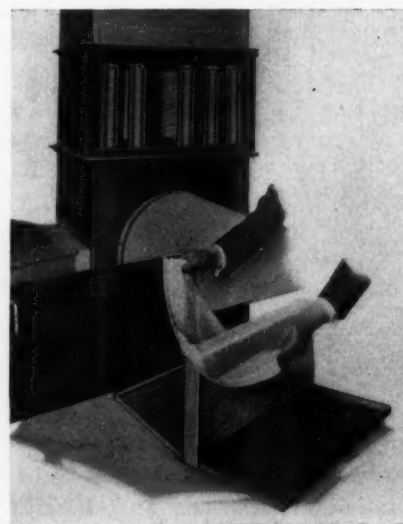
Mr. Biek will continue to direct the sales policies of the Rudy Company, feeling that the sales and management are so closely linked that the various functions can be handled under the same policies which have made the Rudy Company successful in the past.

Mr. Biek has announced that there will be no changes in the executive or office personnel.

Associated with Mr. Biek in the management of the Rudy Furnace Company is A. F. Frazee, who for a period of ten years has been secretary and advertising manager.

#### **American Air Filter Co. Introduces the Airmat Filter-Fan Unit**

Cleaning air with paper—sheets of fluffy matted wood fibre, simple to change, easy to dispose of and inexpensive to renew—is a new development for warm air heating re-



cently introduced by the American Air Filter Co., Louisville, Kentucky.

Airmat, as this paper is called, has been used for more than two years in cleaning the air for building ventilation and industrial processes. It comes in standard sheets twenty-four inches square, and aside from being an efficient air cleaner, is so easily handled that changing a sheet is no more trouble than removing an ordinary desk blotter. The soiled sheets may be burned or thrown away, whichever is most convenient.

The Airmat Filter-Fan Unit really consists of two units—the fan unit which includes the blower and motor, and the filter unit above. The blower is of the multi-blade type, belt driven at low speed for quiet operation and mounted on oil-less bearings to eliminate attention. The motor is rubber mounted and of standard manufacture.



The filter unit comprises a housing mounted directly on the fan unit, containing six Airmat pockets, as the holders for the Airmat sheets are called. If the furnace is equipped with a blower the filter unit can be furnished. The pockets are flanged and slide into metal channels, which hold them securely in place. The lower side of the pockets are open, permitting the air to pass through the filter sheets on either side where the dust and dirt are removed down into the fan unit and then to the furnace.

The capacity of the standard Airmat Filter-Fan Unit is 600-800 C.F.M., ample for an eight-room house. The normal resistance to air flow is .10 inch water gauge. This resistance, while slightly higher than that of the viscous type filter used with gravity circulation or a disc furnace fan, is exceedingly low for the blower type fan for which service the Airmat filter is designed. It is recommended for gas or oil fired furnaces provided with automatic temperature control.

In addition to furnishing clean filtered heat, the Airmat Filter-Fan Unit insures positive circulation and even distribution throughout the home.

#### **Technical Products Co. Announces a New Asbestos In Paint Form**

Technical Products Co., 2308 Main St., Pittsburgh, Pa., manufacturers of Insa-Lute Cement (liquid porcelain), announce a new product—Color-Bestos (asbestos in paint form) to all fields or industries requiring a fireproof insulating paint.

This material may be had in a number of attractive colors as well as white. One of its features is that it may be sprayed or brushed on. Like Insa-Lute, Color-Bestos can be scrubbed or washed, thus making it sanitary as well as fireproof, oilproof, acidproof and a good insulator.

On furnaces it can be used like asbestos to cover the furnace and furnace pipes, but allows the furnace to be washed or cleaned the

same as the other furniture in your home. It is also used for decorating walls, as it adheres readily to plaster, celotex, wallboard, etc.

The company announces that further information, prices, size containers, etc., will be sent upon request.

#### **American Zinc Institute Moves Office**

The American Zinc Institute, which has been at 27 Cedar Street, New York City, has been moved to suite 1562, Lincoln Building, 60 East 42nd Street, New York City.

The new offices are just across the street from the Grand Central Terminal, where many of the midwestern visitors come into New York.

#### **American Rolling Mill Issues New Book on Action of Brine**

Corrosive brine is one of the most severe service conditions to which

sheet metal may be exposed. Many sheet metal contractors have had to deal with this situation and it has cost considerable money to contractors and to buyers of sheet metal assembly.

The American Rolling Mill Company has made a study of the corrosive action of brine and has prepared a booklet which describes the action of brine on metal.

The booklet is prepared in the form of short, one-page articles dealing with particular conditions and how they were overcome. These chapters cover the fields of ice cream plants, artificial ice, meat packing and salt production.

The latter part of the booklet explains how Armco metal withstands these corrosive agents.

The booklet is free to contractors who would like to get help or information on this vexing problem of the industry.

#### **Meier Electric Company Has a New Ventilating Fan on the Market**

The Meier Electric and Machine Company of Indianapolis has just placed on the market a new ventilating fan with several features of interest.

blades are of polished aluminum and are accurately balanced on the shaft. The frame is also of aluminum and is polished to assist air flow.

The ring frame is cup-shaped and the blades overlap the rim, preventing back pressure. The motor is



The design of the fan departs from the usual in several particulars. The motor is totally enclosed and its shaft operates on ball bearings. The fan is direct shaft connected.

The fan is of the propeller type with three or five blades. These

mounted on the ring with a three-way bracket for rigidity.

These fans range in size from 10-inch to 36-inch, and may be had in either three or five blades. For operation in explosive atmospheres the fans may be had with motors approved by the Fire Underwriters' Laboratories.



## THE VENTILATION PROBLEM

(Continued from page 39)

indicates that condensation is due to an absolute stagnation of air. What little moisture is thrown off by the breathing of the persons in the room and by the possible leakage of steam through the air valves of the radiators would not serve to cause extreme humidity.

5. The fact that the cellar sash can be opened will enable you to ventilate through the basement, which is quite desirable inasmuch as, according to the plan, there is no ventilation on the main floor, excepting the two doors both opening to the north.

6. The fact that the hot water coil is for the purpose of cooling the condensation eliminates it from consideration in so far as hooding it and fanning heat into the upper room is concerned.

7. The heat, however, may be utilized for tempering outside air taken in through the cellar sash for ventilation purposes. The fact that the ceiling and roof are not insulated explains to some extent why the heat is insufficient.

8. The lack of present ventilation is indicated by the condensation. Curing of this stagnant air difficulty may be a large factor in taking care of the condensation.

9. The narrow margin of temperature difference between the floor, the intermediate point and the ceiling in extreme cold weather, taken in conjunction with the stagnant air condition, indicates the enormous heat loss through the ceiling. Without such heat loss the space for two feet or so below the ceiling would be a veritable hot air pocket.

10. The knowledge that condensation is dependent on extreme cold, eliminates the necessity for factors other than those we already have under consideration.

11. The possibility of using either fans or gravity also gives us some leeway and will enable us to lay out a system somewhat more flexible, which, considering the heat

problem in conjunction with the condensation problem, is quite desirable.

Now we have laid the entire situation before you. If this job came to you what would you do with it? Let's hear from some of you ventilating boys.

## BROWN'S CLEANING BUSINESS

(Continued from page 29)

utors for Minneapolis-Honeywell regulators and at present are making several homes and office buildings more comfortable to live in.

"Most of the downtown boilers are very carelessly operated and we are now offering a service of supervision for these plants that is proving very popular.

"Our furnace cleaning prices range from \$6.00 to \$25.00, depending on the size of boiler and condition.

"Considering vacuum cleaning from every angle, we have found the business profitable, and we are pleased with it. We heartily recommend cleaning to anyone interested in providing such service.

## Inland Steel Company's Booklets Give Handy Data and Describe New Coated Sheet

The Inland Steel Company, Chicago, has recently issued a booklet and two folders on their sheet steel products. The booklet, "Inland Open Hearth Sheet Steel Products," briefly describes each of the many grades of Inland steel sheets, gives standard extras and differentials, tables of tolerances and weights, and includes a section describing trade customs and practices. One folder, "Inland Galvan-Alloy Steel Sheets," describes the company's new coated Sheet Steel, which does not flake because the coat is alloyed to the base metal, and is especially designed to take paint finishes better. The other folder, "Enduring Sheets at Low Cost," includes some interesting new data on Inland Copper Alloy Steel Sheets, the company's rust and corrosion-resisting product.

## E. T. McCleary, Pres., Republic Steel Corp., Dies Suddenly

Elmer T. McCleary, who was recently elected president of the new Republic Steel Corp., Youngstown, Ohio, died, April 22, at a Youngstown hospital following an operation. He had been president of the former Republic Iron & Steel Co. since April, 1928, when he was elected to succeed Thomas J. Bray.

Mr. McCleary was born at Pine Grove Furnace, Cumberland County, Pennsylvania, in 1879, and attended school at Harrisburg, Pennsylvania. He was graduated as a metallurgist from Penn State College.

When in 1906 Youngstown Sheet & Tube Co. started to build its blast furnace and steel plant, Mr. McCleary's services were obtained as chief chemist. He was successively assistant superintendent of blast furnaces and steel department, superintendent of steel department, assistant general superintendent and district manager of plants in the Youngstown territory. One year later he was elected assistant vice-president, and in January, 1926, he was elected vice-president.

In April, 1928, he was chosen president of the Republic Iron & Steel Co. When a few weeks ago, the merger of that company with Central Alloy Steel Corp., Donner Steel Co., Inc., and Bourne-Fuller Co. was consummated, he was elected to the presidency of the resulting Republic Steel Corp.



National Association of Sheet Metal Contractors, Fort Pitt Hotel, Pittsburgh, Pennsylvania, June 10 to 13. W. B. Markle, 336 Fourth Avenue, Pittsburgh, Secretary.

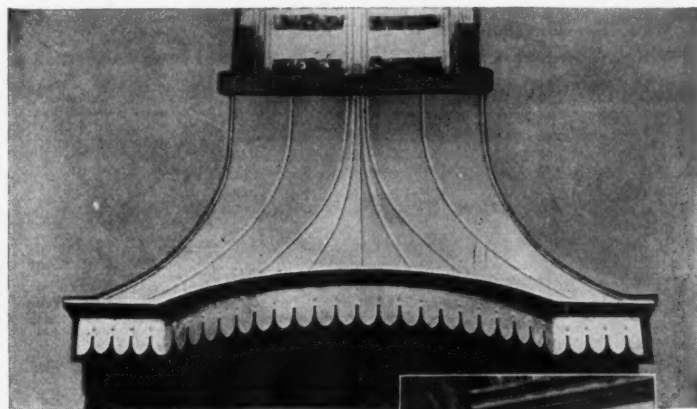
Metal Branch of the National Hardware Association, Clifton House, Niagara Falls, Ont., Can., May 16 and 17.

American Society of Heating and Ventilating Engineers, Semi-Annual Meeting, Curtis Hotel, Minneapolis, Minnesota. June 24 to 27.

# We would rather do an ANACONDA Job than any other kind,



JOHN B. FOSTER, JR., President, (left) and "BILL" HUNT, the genial superintendent of the progressive firm of John B. Foster, Inc., Mt. Kisco, New York.



Two typical Anaconda Copper jobs in Mt. Kisco installed by John B. Foster, Inc. The flatness of Anaconda sheets makes forming easier, and their uniformly correct temper results in excellent workability. Anaconda Copper for the canopy and the leaderhead supplied by Whitehead Metal Products Co., Inc., New York.



*... say John B. Foster, Inc., Sheet Metal Contractors, Mt. Kisco, N. Y.*

JOHN B. FOSTER, Inc., is one of the best known sheet metal contractors in an exclusive residential section of Westchester County, N. Y. John B. Foster, Jr., President, tells in a few words why his firm handles Anaconda Copper:

• • •

"The demand for sound construction has increased so rapidly here in Mt. Kisco that scarcely a building goes up today without copper sheet metal work throughout. And that means flashing windows and half timbers, as well as the roof. Of course, we get our full share of the business and then some... perhaps our specializing in Anaconda has made the work a little easier. Our customers know it by name and our men like to work with it. We would rather do an Anaconda job than any other kind."

• • •

Anaconda Copper is manufactured by methods developed during more than a century's experience in the production of copper, brass and bronze.

Stocks in the form of rolls, Economy Strips, and clean, flat sheets of uniform gauge are maintained by leading distributors, assuring prompt deliveries in all parts of the United States. The American Brass Company, General Offices: Waterbury, Connecticut.

*Sheet Metal Work of*  
**ANACONDA**  **COPPER**

Look for the name ANACONDA in every sheet and strip. Leading supply houses carry it.

*When writing mention AMERICAN ARTISAN—Thank you!*

# GET YOUR SHARE

*of this* **PROFITABLE  
ROOFING  
BUSINESS**

**T**HOUSANDS upon thousands of dollars are being spent annually by this Association in demonstrating the necessity for galvanized roofing on the farm and in rural communities.

It has not been difficult to get the farmer to listen to our story. At the mention of protection from his ever present enemy, Lightning, he is all attention, ready to be shown how he can be completely safeguarded against losing by fire the things he has sweated to raise.

From that point on, however, the achievement of the sale lies with you. It's up to you to let the farmer know that in his community, you are the one to supply him with galvanized sheet protection.

The Association is prepared to help you do this. Proofs of Association advertisements, such as the one shown opposite, for mailing purposes, as well as booklets showing the uses of galvanized roofing, how to ground roofs, etc., will be sent you free of charge. Avail yourself of this opportunity to bring new and profitable sales to your organization.

Products made of galvanized sheets constitute a market which you can well afford to cultivate. Let us furnish you with complete information on any specific product which interests you.

Trade Research Division  
National Association of Flat Rolled Steel Manufacturers  
Terminal Tower, Cleveland, Ohio

## GALVANIZED SHEETS

*Protect against lightning and fire*

*When writing mention AMERICAN ARTISAN—Thank you!*





## Galvanized Roofing Keeps Your Name Off Lightning's Book of Losses...

**E**ACH year, lightning exacts a terrible toll of life and property in the farm districts. Last year lightning caused more than one-eighth of the total farm fire losses which exceeded \$100,000,000. In addition, much of the \$160,000,000 fire loss in towns of 2500 population or less may be attributed to the same cause.

Alarming? Yes! But not to those who have protected their buildings with properly laid and properly grounded galvanized roofing. Such buildings are safeguarded against lightning without the installation of expensive lightning protective systems.

Read what the United States Bureau of Standards, Code for Protection Against Lightning, Bulletin No. 92 says:

"In the case of buildings which are roofed, or roofed and clad with metal of substantial weight or have metal frames, additional conductors can be dispensed with, due attention being given only to bonding and grounding such metal; and to caring for any

upper positions which are susceptible to damage."

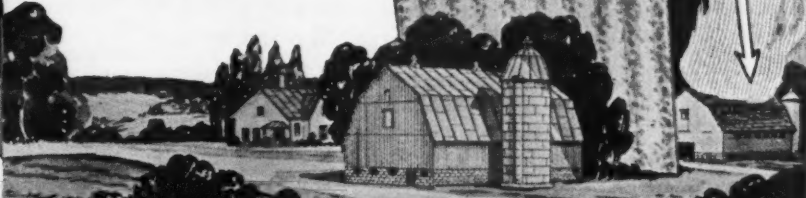
However, galvanized roofing goes beyond the demand for lightning protection. In addition to retarding the communication of fire to or from other buildings, it offers a permanency unaffected by storms, high winds and climatic conditions. It cannot dry or curl up under the heat of the sun. Properly painted, it cannot rust out in the dampest climates. It neither absorbs moisture nor develops cracks. With but little care it lasts a lifetime at the smallest cost per year for upkeep.

Decide now to put on roofs that are lasting and that will keep your name off lightning's book of losses. Complete information on how to order and lay galvanized roofing will be sent free upon request.

Trade Research Division  
National Association of Flat Rolled  
Steel Manufacturers  
511 Terminal Tower Building, Cleveland, Ohio



This booklet "How to Ground a Galvanized Roof Against Lightning" will be sent free of charge. Also send for 24 page book entitled "Steel Roofing—Its Use and Application."



# GALVANIZED SHEETS

*Protect against lightning and fire*

Get your supply of proofs of this advertisement. Enclose one with a letter to the farmers in your neighborhood letting them know the service you can give them with galvanized roofing. Proofs in any quantity are sent to you without charge.

When writing mention AMERICAN ARTISAN—Thank you!

# ~ MARKET QUOTATIONS ~

AMERICAN ARTISAN is the only publication quoting Prices on Metals, Sheet Metal Equipment and Supplies, Warm Air Heating Supplies and Accessories, corrected bi-weekly. These quotations are not guaranteed but are obtained from reliable sources and reflect nation-wide market conditions at the time of going to press.

NOTE—These prices are Chicago Warehouse Prices to which must be added territory differentials

## METALS

### PIG IRON

Chicago Fdy.,	
No. 2	\$19.00
Southern Fdy., No. 2	18.20 to 19.01
Lake Superior Charcoal	23.04 to 27.04
Malleable	19.00

### FIRST QUALITY BRIGHT CHARCOAL TIN PLATES

IC	20x28	112 sheets	\$22.50
IX	20x28	112 sheets	25.50
IXX	20x28	56 sheets	14.50
IXXX	20x28	112 sheets	15.50
IXXXX	20x28		17.00

### TERNE PLATES

	Per Box
IC 20x28, 40-lb. 112 sheets	\$25.00
IX 20x28, 40-lb. 112 sheets	27.75
IC 20x28, 65-lb. 112 sheets	21.15
IX 20x28, 65-lb. 112 sheets	23.80
IC 20x28, 20-lb. 112 sheets	19.55
IV 20x28, 20-lb. 112 sheets	22.05

### "ARMCO" INGOT IRON PLATES

No. 8 ga.—110 lbs.	\$4.15
3/16 in.—100 lbs.	4.05
1/2 in.—100 lbs.	3.85

### COKE PLATES

Cokes, 80 lbs., base, 20x28	\$12.00
Cokes, 90 lbs., base, 20x28	12.20
Cokes, 100 lbs., base, 20x28	13.75
Cokes, 107 lbs., base, IC,	
20x28	12.75
Cokes, 135 lbs., base, IX,	
20x28	14.75
Cokes, 155 lbs., base, 2X,	
56 sheets	8.50
Cokes, 175 lbs., base, 3X,	
56 sheets	9.35
Cokes, 195 lbs., base, 4X,	
56 sheets	10.25

### BLUE ANNEALED SHEETS

Base 10 gal.	per 100 lbs. \$3.35
"Armco" 10 ga.	per 100 lbs. 4.15

### ONE PASS COLD ROLLED BLACK

No. 18-20	per 100 lbs. \$3.85
No. 22	per 100 lbs. 4.00
No. 24	per 100 lbs. 4.05
No. 26	per 100 lbs. 4.15
No. 27	per 100 lbs. 4.20
No. 28	per 100 lbs. 4.30

### GALVANIZED

No. 16	per 100 lbs. \$4.10
No. 18	per 100 lbs. 4.20
No. 20	per 100 lbs. 4.40
No. 22	per 100 lbs. 4.45
(Standard differentials on extras to apply)	
No. 24	per 100 lbs. \$4.60
No. 26	per 100 lbs. 4.85
No. 27	per 100 lbs. 4.95
No. 28	per 100 lbs. 5.10
"Armco" 24	per 100 lbs. 6.15

### BAR SOLDER

Warranted 50-50	per 100 lbs. \$23.50
45-55	per 100 lbs. 22.50
48-52	per 100 lbs. 21.50
Plumbers'	per 100 lbs. 19.00

### ZINC

In Slabs	\$5.75
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### SHEET ZINC

Cask Lots (600 lbs.)	\$12.00
Sheet Lots (100 lbs.)	13.00

### BRASS

Sheets, Chicago base	20 1/2 c
Tubing, brazed, Chicago base	28 c
Tubing, seamless, Chicago base	25 1/2 c
Wire, Chicago base	21 c
Rods, Chicago base	18 1/2 c

## COPPER

Sheets, Chicago base	22 1/2 c
Tubing, seamless, Chicago base	26 c
Wire, plain rd., S. B. & S. Ga. and heavier	21 1/2 c

## LEAD

American Pig	\$6.50
Bar	8.50

## TIN

Bar Tin	per 100 lbs. \$40.00
Pig Tin	per 100 lbs. 39.00

## SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES

## ASBESTOS

Paper up to 1/16	6c per lb.
Roll board	7 1/2 c per lb.
Mill board 3/32 to 1/4	7 1/2 c per lb.
Corrugated paper (250 sq. ft. per roll)	\$6.00 per roll

## ASBESTOS SEGMENTS

8 in.	per 100 sets \$7.30
9 in.	per 100 sets 8.30
10 in.	per 100 sets 9.30
12 in.	per 100 sets 10.50

## CEMENT FURNACE

American Seal, 5-lb. cans, net	\$0.40
American Seal, 10-lb. cans, net	0.80
American Seal, 25-lb. cans, net	2.00
Pecora	per 100 lbs. 7.50

## CLIPS

Damper	
No-Rivet Steel, with tail pieces, per gross	\$9.50
Rivet Steel, with tail pieces, per gross	7.50
Tail pieces, per gross	2.40

## COPPER FOOTING

Copper Footing	34 %
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## CORNICE BRAKES

Chicago Steel Bending	
Nos. 1 to 6B	Net

## CUT-OFFS

Cal., plain, round or cor. rd.	
26 gauge	30 %
28 gauge	35 %

## DAMPERS

Yankee Hot Air	
7 inch, doz.	\$1.60
8 inch, doz.	2.20
9 inch, doz.	2.60
10 inch, doz.	2.80
12 inch, doz.	3.50
14 inch, doz.	5.00

## EAVES TROUGH

Galv. Crimpedge, crated	75-10 %
Zinc, "Barnes"	60 %

## ELBOWS

Conductor Pipe	
Galv. plain or corrugated, round flat Crimp.	
28 gauge	60 %
26 gauge	45 %
24 gauge	15 %

## Galv. Terne Steel

Plain Rd. and Rd. Corr.	
28 gauge	60 %
26 gauge	45 %
24 gauge	15 %

## Square Corrugated

28 gauge	50 %
26 gauge	35 %

## Portico Elbows

Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested	70 & 5 %
Nested solid	70 & 5 %

## Sq. Corr., A. & B. & Octagon

28 gauge	50 %
26 gauge	35 %

## Portico

1, 1 1/4, 1 1/2 inch	45 %
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## Copper

16 oz. all designs	45 %
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## Zinc

All styles	60 %
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## ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue "Milcor" No. 28 Gauge.	Doz.
5 inch	\$1.15
6 inch	1.26
7 inch	1.75

## Special Corrugated

6 inch	\$1.00
7 inch	1.60

## Adjustable—Uniform Blue

"Milcor" No. 28 Gauge, Uniform Blue.	
5 inch	\$1.60
6 inch	1.75
7 inch	2.10

## WOOD FACES—60 % off list.

## FIRE POTS

Geo. W. Diener Mfg. Co.	Each
No. 02 Gasoline Torch, 1 qt.	\$5.13
No. 9250, Kerosene, or Gasoline Torch, 1 qt.	6.50
No. 10 Tinner's Furnace Square tank, 1 gal.	11.20
No. 15 Tinner's Furnace Round tank, 1 gal.	10.70
No. 21 Gas Soldering Furnace	8.00
No. 110 Automatic Gas Soldering Furnace	10.50

## GLASS

Single and Double Strength, A, all brackets	85 %
Single and Double Strength, B, all brackets	87 %

## HANGERS

Conductor Pipe	
Milcor Perfection Wire	25 %
Milcor Triplex Wire	10 %

## Eaves Trough

Milcor Steel (galv. after forming) from list	45 %
Milcor Selflock E. T. Wire, List	10 %

## HOOKS

Conductor	
"Direct Drive" Wrought Iron for wood or brick	15 %

## MITRES

Galvanized Steel Mitres	
28 gauge	70
26 gauge	60-20

## PASTE

### Asbestos Dry Paste

200-lb. barrel	\$15.00
100-lb. barrel	7.75
50-lb. pail	4.50
25-lb. pail	2.50
10-lb. bag	1.20
5-lb. bag	0.60

## PIPE

### Galvanized

Crated and nested (all gauges)	75-7 1/2 %
Crated and not nested (all gauges)	75-2 1/2 %

### Furnace Pipe

Double Wall Pipe and Fittings	60 %
Single Wall Pipe, Round Galvanized Pipe	60 %
Galvanized and Tin Fittings	60 %

## Lead

Per 100 lbs.	\$12.50
Stove Pipe	
"Milcor" "Titelock" Uniform Blue Stove	
28 gauge, 5 inch U. C.	
28 gauge, 6 inch U. C.	\$11.00
28 gauge, 7 inch U. C.	12.00
30 gauge, 5 inch U. C.	14.00
30 gauge, 6 inch U. C.	10.25
30 gauge, 7 inch U. C.	11.00
30 gauge, 7 inch U. C.	13.00

### T-Joint Made Up

6 inch, 28 ga.	per doz. \$3.40
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## REGISTERS AND FACES

### Floor Registers

Except Cast Iron	40 & 10 %
Cast Iron	20 %

### Baseboard

2-Piece	40 & 10 %
1-Piece	40-10 & 20 %

### Adjustable Ventilators

Adjustable Cold Air Faces	40 & 10 %
Adjustable Ventilators	40 & 10 %

## RIDGE ROLL

Galv. Plain Ridge Roll, b'd'd	75-15-5 %
Galv., Plain Ridge Roll, crated	75-15 %

## SCREWS

Sheet Metal	
7 1/2 x 1/4, per gross	\$0.52
No. 10, 1/2 x 3/16, per gross	0.68
No. 14, 3/4 x 1/4, per gross	0.83

## SHEARS, TINNERS' AND MACHINISTS'

Viking	\$22.00
--------	---------

### Lennox Throatless

No. 18	35 %
Shear blades	10 %
(f. o. b. Marshalltown, Iowa.)	

## SHOES

Galv. 28 Gauge, Plain or Corrugated, round flat crimp.	60 %
26 gauge, round flat crimp.	45 %
24 gauge, round flat crimp.	15 %

## SNIPS, TINNERS'

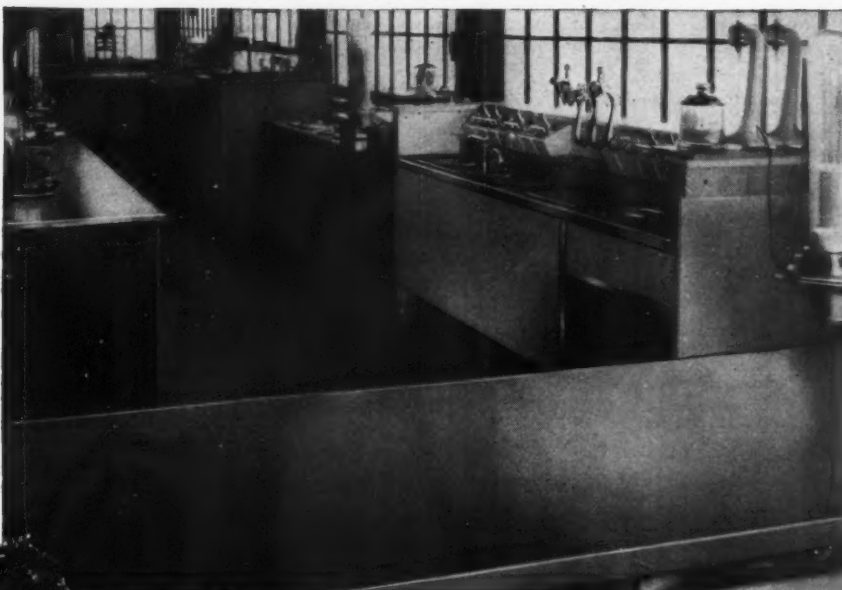
Milcor	Net
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## VENTILATORS

Standard	30 to 40 %
Milcor	Net

# Get into your CAR . . .

*and discover*



Denville Shack at Denville, N. J.—a roadside lunch room where Monel Metal is used for counter tops, shelves and cabinet tops. Installed by PERCY E. MORGAN, East Orange, N. J. Ice cream cabinet top and soda fountain also of Monel Metal.

## *...this well-posted road to New Profit!*

OF course you know how widely Monel Metal is used for food service equipment in hotels, hospitals, clubs, restaurants and other institutions. Right now, perhaps, you are making nice profits from the fabrication of Monel Metal table and cabinet tops, hoods, counters, linings, sinks and a host of similar units.

But perhaps it has never occurred to you that, in addition to this fine market, there is another big, fertile field lying at your very door. A field for Monel Metal equipment that has scarcely been scratched!

The highways around your community are lined with roadside lunch rooms, "hot dog" stands, refreshment counters and tourist camps, some of which already have Monel Metal soda fountains or ice cream cabinets they would like

to match. Most of these places, with their popular price appeal, are coining money. Their facilities and appointments are being constantly improved. They are ideal prospects for Monel Metal installations which you can make!

Go after this market. Show these roadside caterers how Monel Metal equipment will "dress up" the appearance of their stands and attract more trade. Tell them how it saves cleaning time and cost because it can't rust and is highly resistant to corrosive attacks of food acids. Point out how this silvery Nickel alloy gives lifetime service because it's as strong as steel and has no coating to chip, crack or wear off.

The main thing is: Start now. The tourist parade is just around the corner. Big money ahead! Details of Monel Metal selling helps on request. Write.



The fascinating story of Monel Metal—its properties and uses—is told in a new, 2-reel motion picture film. Write for details of free distribution.

# MONEL METAL



Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

*When writing mention AMERICAN ARTISAN—Thank you!*



# BUYERS' DIRECTORY

- Air Cleaners**  
Meyer & Bro. Co., F., Peoria, Ill.  
Watt Mfg. Co., Sterling, Ill.
- Air Conditioning Machines**  
Watt Mfg. Co., Sterling, Ill.
- Aluminum Sheets**  
J. M. & L. A. Osborn Co., Cleveland, Ohio
- Asbestos Paper**  
Sall-Mountain Co., Chicago, Ill.
- Asbestos Paper Products**  
Sall-Mountain Co., Chicago, Ill.
- Blast Gates**  
Berger Bros. Co., Philadelphia, Pa.
- Blowers—Furnace**  
Brundage Co., Kalamazoo, Mich.  
Lakeside Co., Hermansville, Mich.
- Bolts—Stove**  
Lamson & Sessions Co., Cleveland, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.
- Brakes—Bending**  
Drels & Krump Mfg. Co., Chicago, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.
- Brakes—Cornice**  
Drels & Krump Mfg. Co., Chicago, Ill.
- Brass and Copper**  
American Brass Co., Waterbury, Conn.  
Chase Brass & Copper Co., Waterbury, Conn.  
Copper & Brass Research Association, New York, N. Y.  
Revere Copper & Brass, Rome, N. Y.
- Bronze**  
Revere Copper & Brass, Rome, N. Y.
- Cans—Garbage**  
Diener Mfg. Co., G. W., Chicago, Ill.  
Osborn Co., The J. M. & L. A., Cleveland, Ohio
- Castings—Malleable**  
Fanner Mfg. Co., Cleveland, Ohio
- Ceilings—Metal**  
Eller Manufacturing Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Chaplets**  
Fanner Mfg. Co., Cleveland, Ohio
- Cleaners—Vacuum**  
Brillion Furnace Co., Brillion, Wis.  
National Super Service Co., Toledo, Ohio
- Copper**  
American Brass Co., Waterbury, Conn.  
Chase Brass & Copper Co., Waterbury, Conn.  
Revere Copper & Brass, Rome, N. Y.  
Rockford Sheet Steel Co., Rockford, Ill.
- Cornices**  
Eller Manufacturing Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Cut-offs—Rain Water**  
Eller Manufacturing Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Dampers—Quadrants—Accessories**  
Eller Mfg. Co., Canton, Ohio  
Hart & Cooley Co., Holland, Mich.  
Howes Co., S. M., Boston, Mass.  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City  
Parker-Kalon Corp., New York, N. Y.
- Dampproofings**  
Lastik Products Corp., Pittsburgh, Pa.
- Damper Regulators**  
Sheer Co., H. M., Quincy, Ill.
- Diffuser—Air Duct**  
Aeolus-Dickinson Co., Chicago, Ill.
- Drills—Electric**  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
J. M. & L. A. Osborn Co., Cleveland, Ohio
- Drive Screws—Hardened Metallic**  
Parker-Kalon Corp., 200 Varick St., New York
- Dust Eliminator**  
Dustless Ash Co., Muskegon, Mich.
- Eaves Trough**  
Barnes Metal Products Co., Chicago, Ill.  
Berger Bros. Co., Philadelphia, Pa.  
Chase Brass & Copper Co., Waterbury, Conn.  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City  
Rockford Sheet Steel Co., Rockford, Ill.
- Elbow and Shoes—Conductor**  
Barnes Metal Products Co., Chicago, Ill.  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City  
Rockford Sheet Steel Co., Rockford, Ill.
- Fittings—Conductor**  
Barnes Metal Products Co., Chicago, Ill.  
Braden Mfg. Co., Terre Haute, Ind.  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Flue Thimbles**  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Fluxes—Soldering**  
Kester Soldering Co., Chicago, Ill.
- Furnace Cement**  
Connors Paint Mfg. Co., Wm., Troy, N. Y.  
Eller Mfg. Co., Canton, Ohio  
Lastik Products Corp., Pittsburgh, Pa.  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Furnace Cement—Liquid**  
Technical Products Co., Pittsburgh, Pa.
- Furnace Chain**  
Hart & Cooley Co., Holland, Mich.
- Furnace Cleaners—Suction**  
Brillion Furnace Co., Brillion, Wis.  
National Super Service Co., Toledo, Ohio
- Furnace Fans**  
A-C Mfg. Co., Pontiac, Ill.  
Brundage Co., The Kalamazoo, Mich.  
Lakeside Co., Hermansville, Mich.  
Robinson Co., A. H., Massillon, Ohio  
Watt Mfg. Co., Sterling, Ill.
- Furnace Paste**  
Larsen-Bennett Co., Omaha, Neb.
- Furnace Pokers**  
Fanner Mfg. Co., Cleveland, Ohio
- Furnace Pulleys**  
Hart & Cooley Co., Holland, Mich.
- Furnace Regulators**  
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.  
Sheer Co., H. M., Quincy, Ill.  
White Mfg. Co., Minneapolis, Minn.
- Furnace Rings**  
Eller Mfg. Co., Canton, Ohio  
Forest City-Walworth Run Foundries Co., Cleveland, Ohio  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Furnace Switch—Automatic**  
Payne Furnace & Supply Co., Beverly Hills, Cal.  
Robinson Co., A. H., Massillon, Ohio
- Furnaces—Gas**  
Payne Furnace & Supply Co., Beverly Hills, Cal.  
Robinson Co., A. H., Massillon, Ohio  
Rudy Furnace Co., Dowagiac, Mich.
- Furnaces—Warm Air**  
Agricola Furnace Co., Gadsden, Ala.  
American Furnace Co., St. Louis, Mo.  
Brillion Furnace Co., Brillion, Wis.  
Farris Furnace Co., Springfield, Ill.  
Forest City-Walworth Run Fdy., Cleveland, Ohio  
Fox Furnace Co., Elyria, Ohio  
Henry Furnace & Fdy. Co., Cleveland, Ohio  
Hess Warming & Ventilating Co., Chicago, Ill.  
Langenberg Mfg. Co., St. Louis, Mo.  
London Furnace Co., London, Ohio  
Lennox Furnace Co., Marshalltown, Iowa  
May Flebeger Furnace Co., Syracuse, N. Y.  
Meyer Furnace Co., The Peoria, Ill.  
Midland Furnace Co., Columbus, Ohio  
Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.  
Payne Furnace & Supply Co., Beverly Hills, Cal.  
Premier Warm Air Heater Co., Dowagiac, Mich.  
Peerless Foundry Co., Indianapolis, Ind.  
Richardson & Boynton Co., New York, N. Y.  
Robinson Co., A. H., Massillon, Ohio  
Rudy Furnace Co., Dowagiac, Mich.  
Standard Fdy. & Furnace Co., De Kalb, Ill.  
Success Heater Mfg. Co., Des Moines, Iowa  
Schwab & Sons Co., R. J., Milwaukee, Wis.  
Waterman-Waterbury Co., Minneapolis, Minn.  
Western Steel Products Co., Duluth, Minn.  
Wise Furnace Co., Akron, Ohio
- Gas Burning Attachments**  
Munkel-Rippel Heating Co., Columbus, Ohio
- Grilles**  
Auer Register Co., Cleveland, Ohio  
Harrington & King Perforating Co., Chicago, Ill.  
Hart & Cooley Co., New Britain, Conn.  
Highton & Sons, Wm., Nashua, N. H.  
Independent Register & Mfg. Co., Cleveland, Ohio
- Guards—Machine and Belt**  
Harrington & King Perforating Co., Chicago, Ill.
- Handles—Boiler**  
Berger Bros. Co., Philadelphia, Pa.
- Handles—Soldering Iron**  
Hyro Mfg. Co., New York, N. Y.
- Handles—Furnace Door**  
Fanner Mfg. Co., Cleveland, Ohio
- Hangers—Eaves Trough**  
Berger Bros. Co., Philadelphia, Pa.  
Chase Brass & Copper Co., Waterbury, Conn.  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Heat Regulation Systems**  
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.  
Sheer Co., H. M., Quincy, Ill.  
White Mfg. Co., Minneapolis, Minn.
- Heaters—Cabinet**  
Fox Furnace Co., Elyria, Ohio  
Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.  
Waterman-Waterbury Co., Minneapolis, Minn.
- Heaters—Combination Water**  
Alamo Heater Co., Chicago, Ill.  
Standard Fdy. & Furnace Co., De Kalb, Ill.
- Heaters—Domestic Hot Water**  
Alamo Heater Co., Chicago, Ill.  
Standard Fdy. & Furnace Co., De Kalb, Ill.
- Heaters—School Room**  
Meyer Furnace Co., The Peoria, Ill.  
Western Steel Products Co., Duluth, Minn.  
Waterman-Waterbury Co., Minneapolis, Minn.
- Humidifiers**  
Diener Mfg. Co., G. W., Chicago, Ill.  
Meyer & Bro. Co., F., Peoria, Ill.  
Sheer Co., H. M., Quincy, Ill.  
Watt Mfg. Co., Sterling, Ill.
- Lath—Expanding Metal**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Machines—Crimping**  
Bertsch & Co., Cambridge City, Ind.
- Machinery—Culvert**  
Bertsch & Co., Cambridge City, Ind.
- Machines—Tinsmith's**  
Bertsch & Co., Cambridge City, Ind.  
Drels & Krump Mfg. Co., New York, N. Y.  
Hyro Mfg. Co., Chicago, Ill.  
Interstate Machinery Co., Chicago, Ill.  
La Salle Machine Works, Chicago, Ill.  
Marshalltown Mfg. Co., Marshalltown, Iowa  
Osborn Co., The J. M. & L. A., Cleveland, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
Whitney Mfg. Co., W. A., Rockford, Ill.
- Metals—Perforated**  
Harrington & King Perforating Co., Chicago, Ill.
- Miters**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Miters—Eaves Trough**  
Barnes Metal Products Co., Chicago, Ill.  
Berger Bros. Co., Philadelphia, Pa.  
Braden Mfg. Co., Terre Haute, Ind.  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., La Crosse, Kan. City
- Nails—Copper and Brass**  
Chase Brass & Copper Co., Waterbury, Conn.  
Revere Copper & Brass, Rome, N. Y.

(Continued on page 54)

Say you saw it in AMERICAN ARTISAN—Thank you!

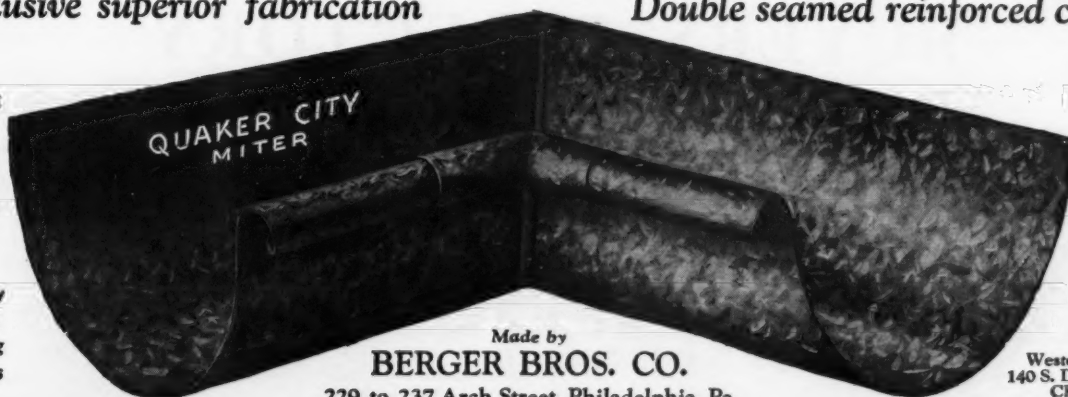
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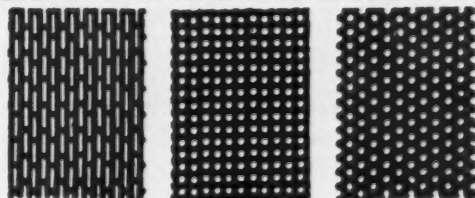
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When writing mention *AMERICAN ARTISAN*—Thank you!



# BUYERS' DIRECTORY

(Continued from page 52)

**Nails—Hardened Masonry**  
Parker-Kalon Corp., New York, N. Y.

**Oil Burners**  
Crystal Oil Burner Corp., New York, N. Y.  
McIlvaine Burner Corp., Evanston, Ill.

**Ornaments—Sheet Metal**  
Eller Mfg. Co., Canton, Ohio  
Miller & Doing, Inc., Brooklyn, N. Y.  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Paint**  
Connors Paint Mfg. Co., Wm., Troy, N. Y.

**Perforated Metals**  
Harrington & King Perforating Co., Chicago, Ill.

**Pipe and Fittings—Furnace**  
Eller Mfg. Co., Canton, Ohio  
Henry Furnace & Fdy. Co., Cleveland, Ohio  
Meyer & Bro. Co., F., Peoria, Ill.  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
Osborn Co., The J. M. & L. A., Cleveland, Ohio  
Peerless Foundry Co., Indianapolis, Ind.

**Pipe and Fittings—Stove**  
Meyer & Bro. Co., F., Peoria, Ill.  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Pipe—Conductor**  
Barnes Metal Products Co., Chicago, Ill.  
Berger Bros. Co., Philadelphia, Pa.  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Pipe Covering**  
Sall Mountain Co., Chicago, Ill.

**Presses**  
LaSalle Machine Works, Chicago, Ill.

**Punches**  
Bertsch & Co., Cambridge City, Ind.  
Interstate Machinery Co., Chicago, Ill.  
LaSalle Machine Works, Chicago, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
W. A. Whitney Mfg. Co., Rockford, Ill.

**Punches—Combination Bench and Hand**  
Hyro Mfg. Co., New York, N. Y.

**Punches—Hand**  
Hyro Mfg. Co., New York, N. Y.  
W. A. Whitney Mfg. Co., Rockford, Ill.

**Putty—Stove**  
Connors Paint Mfg. Co., Wm., Troy, N. Y.

**Radiator Cabinets**  
Hart & Cooley Co., Holland, Mich.

**Ranges—Gas**  
Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.  
Richardson & Boynton Co., New York, N. Y.

**Registers—Warm Air**  
Auer Register Co., Cleveland, Ohio  
Eller Mfg. Co., Canton, Ohio  
Forest City-Walworth Run Foundries Co., Cleveland, Ohio  
Hart & Cooley Co., Holland, Mich.  
Henry Furnace & Fdy. Co., Cleveland, Ohio  
Independent Register & Mfg. Co., Cleveland, Ohio  
Meyer & Bro. Co., F., Peoria, Ill.  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
Rock Island Register Co., Rock Island, Ill.  
Symonds Register Co., St. Louis, Mo.

**Registers—Wood**  
American Wood Register Co., Plymouth, Ind.  
Auer Register Co., Cleveland, Ohio  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Regulators—Heat**  
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.  
H. M. Sheer Co., Chicago, Ill.  
White Mfg. Co., Minneapolis, Minn.

**Ridging**  
American Rolling Mill Co., Middletown, Ohio  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Rivets—Stove**  
Lamson & Sessions Co., Cleveland, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Rods—Stove**  
Lamson & Sessions Co., Cleveland, Ohio

**Rolls—Forming**  
Bertsch & Co., Cambridge City, Ind.

**Roofing Cement**  
Connors Paint Mfg. Co., Wm., Troy, N. Y.  
Lastik Products Corp., Pittsburgh, Pa.

**Roof Paints**  
Lastik Products Corp., Pittsburgh, Pa.

**Roof—Flashing**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Milwaukee, Wis.

**Roofing—Iron and Steel**  
American Rolling Mill Co., Middletown, Ohio  
Central Alloy Steel Corp., Massillon, Ohio  
Eller Mfg. Co., Canton, Ohio  
Inland Steel Co., Chicago, Ill.  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
Osborn Co., The J. M. & L. A., Cleveland, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Roofing—Tin**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
Taylor Co., N. & G., Philadelphia, Pa.

**Rubbish Burners**  
Hart & Cooley Co., New Britain, Conn.

**Schools—Sheet Metal Pattern Drafting**  
St. Louis Technical Institute, St. Louis, Mo.

**Schools—Warm Air Heating**  
St. Louis Technical Institute, St. Louis, Mo.

**Screws—Hardened Metallic Drive**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
Parker-Kalon Corp., 200 Varick St., New York

**Screws—Hardened Self-Tapping, Sheet Metal**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
Parker-Kalon Corp., 200 Varick St., New York

**Screens—Perforated Metal**  
Harrington & King Perforating Co., Chicago, Ill.

**Shears—Hand and Power**  
Interstate Machinery Co., Chicago, Ill.  
Marshalltown Mfg. Co., Marshalltown, Ia.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
Viking Shear Co., Erie, Pa.

**Sheet Metal Screws—Hardened, Self-Tapping**  
Parker-Kalon Corp., 200 Varick St., New York

**Sheets—Alloy**  
Central Alloy Steel Co., Massillon, Ohio  
International Nickel Co., New York, N. Y.

**Sheets—Black and Galvanized**  
American Rolling Mill Co., Middletown, Ohio  
Central Alloy Steel Co., Massillon, Ohio  
Eller Mfg. Co., Canton, Ohio  
Inland Steel Co., Chicago, Ill.  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
National Association of Flat Rolled Steel Manufacturers, Cleveland, Ohio  
Osborn Co., The J. M. & L. A., Cleveland, Ohio  
Rockford Sheet Steel Co., Rockford, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
Taylor Co., N. & G., Philadelphia, Pa.

**Sheets—Iron**  
American Rolling Mill Co., Middletown, Ohio  
Central Alloy Steel Corp., Massillon, Ohio  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Sheets—Tin**  
Taylor Co., N. & G., Philadelphia, Pa.

**Shingles and Tiles—Metal**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Sifters—Ash**  
Diener Mfg. Co., G. W., Chicago, Ill.

**Sky Lights**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Snips**  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Solder—Acid Core**  
Kester Solder Co., Chicago, Ill.

**Solder—Self-Fluxing**  
Kester Solder Co., Chicago, Ill.

**Solder—Rosin Core**  
Kester Solder Co., Chicago, Ill.

**Solder**  
Eller Mfg. Co., Canton, Ohio  
Kester Solder Co., Chicago, Ill.  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Soldering Coppers**  
Revere Copper & Brass, Rome, N. Y.

**Soldering Furnaces**  
Diener Mfg. Co., G. W., Chicago, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Specialties—Hardware**  
Diener Mfg. Co., G. W., Chicago, Ill.

**Stars—Hard Iron Cleaning**  
Fanner Mfg. Co., Cleveland, Ohio

**Statuary**  
Miller & Doing, Inc., Brooklyn, N. Y.

**Stove Pipe Reducers**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City

**Tinplate**  
Eller Mfg. Co., Canton, Ohio  
Milwaukee Corrugating Co., Mil., Chgo., LaCrosse, Kan. City  
Osborn Co., The J. M. & L. A., Cleveland, Ohio  
Taylor Co., N. & G., Philadelphia, Pa.

**Tools—Tinsmith's**  
Bertsch & Co., Cambridge City, Ind.  
Dries & Krump Mfg. Co., Chicago, Ill.  
Hyro Mfg. Co., New York, N. Y.  
Interstate Machinery Co., Chicago, Ill.  
Osborn Co., The J. M. & L. A., Cleveland, Ohio  
Rockford Sheet Steel Co., Rockford, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
Viking Shear Co., Erie, Pa.  
Whitney Mfg. Co., W. A., Rockford, Ill.

**Torches**  
Diener Mfg. Co., G. W., Chicago, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Trade Extension**  
Copper & Brass Research Association  
National Association of Flat Rolled Steel Manufacturers, Cleveland, Ohio  
Sheet Steel Trade Extension Committee, Cleveland, Ohio

**Trimnings—Stove and Furnace**  
Fanner Mfg. Co., Cleveland, Ohio

**Vacuum Cleaner—Furnace**  
Brillion Furnace Co., Brillion, Wis.  
National Super Service Co., Toledo, Ohio

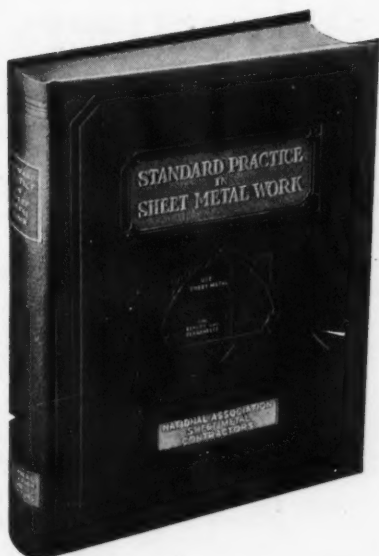
**Ventilators**  
Aeolus Dickinson Co., Chicago, Ill.  
Berger Bros. Co., Philadelphia, Pa.  
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## WANTS AND SALES

Yearly subscribers to the AMERICAN ARTISAN may insert advertisements of not more than fifty words in our Want and Sales Columns WITHOUT CHARGE for three insertions.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired, and must reach our office ten days prior to date of publication. This privilege is not extended to manufacturers or jobbers—or those making a business of buying and selling used machines—employment agencies and brokers.

When sending advertisement state whether your name or blind number is to be used.

## BUSINESS CHANCES

**Lightning Rods**—Dealers who are selling Lightning Protection will make money by writing to us for our latest Factory to Dealer Prices. We employ no salesmen and save you all overhead charges. Our Pure Copper Cable and Fixtures are endorsed by the National Board of Fire Underwriters and hundreds of dealers. Write today for samples and prices. L. K. Diddie Company, Marshfield, Wis.

**Wanted to Buy**—Small sheet metal shop in town of 10,000 or less. Prefer Arkansas, Mississippi or Georgia—or will buy half interest in shop. This must be a shop making money. Will pay part cash and balance monthly. Address W. H. S., 1505 Arlington Ave., Bessemer, Ala. Z-518

**Sheet metal, jobbing and manufacturing shop for sale.** In successful operation for 20 years. Ninety miles south of Chicago. Lot, building, stock and tools well worth \$2,500. Selling on account of age and ill health. Will take less for immediate sale. Address H. W. Darrow, Winamac, Ind. J-521

**For Sale**—Well equipped plumbing, heating and sheet metal shop. Only shop in town of 1,600 population. Centrally located. Six good sized living rooms in connection. Good chance for a hustler. Address A-519, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**For Sale in DuQuoin, Ill.**—An old established tinshop. Must sell on account of ill health. Will rent building reasonably. Inquire Fred Steinwax, Box 175, DuQuoin, Ill. B-519

**For Sale**—Combination tin and plumbing shop in one of the best little towns in Nebraska. Other business to occupy my time, reason for selling. Address R-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

## SITUATION WANTED

This is addressed to a manufacturer who harps on quality furnaces and intelligent installations. If such a manufacturer needs a sales-manager or assistant sales manager, I would like to hear from him. For ten years I helped market a well known furnace. Served in sales promotion and advertising departments, as a salesman, and as branch manager. Thorough investigation as to character and ability invited. Communications strictly confidential. Address F-519, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Position Wanted**—By young man experienced in ventilation, furnace and general sheet metal work. Good layout man and draftsman. Steady work more essential than high wages. Address Carl Slater, 2214 7½ St. So., Minneapolis, Minn. B-521

## SITUATION WANTED

Sheet metal mechanic, 21 years' experience in ventilating, skylight, cornice, furnace, restaurant and general sheet metal work, desires position. Capable of taking any sized job and completing same according to specifications. Experienced foreman and estimator. Can furnish reference from all former employers. Married, sober, reliable and anxious to connect with firm where there is a future. Employed but wish to make change. Address X-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

First class sheet metal worker and furnace man desires position west of the Mississippi, preferably southwest. Understands Standard Code installations from both engineering and installation viewpoint. Can cut most patterns, lay slate, and some knowledge of plumbing, fender and body work. Like to hook up with furnace concern in engineering department; 18 years' general experience. Address G-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By superintendent who understands estimating, costs, production, designing, engineering and marketing in the various branches of the metal industry, comprising metal specialties, metal stamping, tanks, structural steel, heating and ventilating, etc. Twenty years' experience with one firm in executive capacity; 44 years of age and married. Address C-521, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By first class tinner and sheet metal worker at all branches of the trade, including heating and ventilating, furnace, all outside work; also dairy, hotel and kitchen equipment. Steady, reliable; best of reference as to ability as mechanic and taking charge of men and producing results. Forty-eight years of age and in good health. Address J-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By experienced sheet metal salesman. Twenty-three years' traveling experience in the line. Well acquainted with sheet metal and furnace dealers in Iowa. Reference and bond furnished Iowa territory. Can begin work at once. Address Z-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Position Wanted**—By first class metal worker and furnace man with plumbing experience. Can take charge of shop, lay out work, and sell goods. Married, family, strictly sober. Prefer Western Iowa, Eastern Nebraska, South Dakota or Southwestern Minnesota. Can come at once. Address J. P. Nelsen, 3332 Garrettsboro Ave., Sioux City, Iowa. A-517

**Position Wanted**—By all-round sheet metal worker. Have had experience in all lines of work, either at bench or outside. Can estimate draft patterns and take charge of anything in the business. Illinois or Indiana preferred. Address A-521, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—Combination sheet metal, furnace and hardware man. Over 20 years' experience. Live, active and reliable. Can lay out and handle all types of sheet metal work. Prefer live country town. Sober, reliable and married. Address H-518, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By combination sheet metal, plumbing and heating man. Will take straight plumbing or sheet metal job. Very good on warm air heating. Forty years of age, 18 years at the trade and will go anywhere. Address T-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Would like to get in touch with hardware company, Nebraska preferred, who can use a middle aged combination plumber, fitter and general heating man. Steady and reliable. Can do estimating and layout. Would consider interest in reliable company. Address L-518, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Having sold my share of hardware business, with 20 years' experience in plumbing, hot air, steam and hot water heating, sheet metal, pump and windmill, farm machinery and electrical work, would consider year 'round job anywhere. 45 years of age, married and industrious. Address Chas. F. Fisher, Cazenovia, Wis. H-520

## SITUATION WANTED

**Situation Wanted**—Sheet metal worker, thoroughly experienced in pattern drafting, ventilating, blowpipe and general furnace work, desires position in or near Chicago. 20 years' experience. Young, industrious, sober, reliable family man. Desire steady job. Address K-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By licensed master plumber, steam and hot water fitter, 16 years of experience in estimating the above work. Have \$1,000 to invest in good paying shop. Can furnish best of references as to ability and honesty. Address L-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By first class sheet metal worker, plumber and warm air furnace man. Would like position in connection with hardware store. Iowa or Illinois preferred. Address S-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By experienced tinner and warm air furnace installer. Good on gutters and all outside work. Sober and steady workman. Years of experience in hardware and tin shop. Address Y-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By practical tinner and furnace installer. Reliable, competent workman, active and steady. Good on gutters and all outside work. Can start at once. Address E-519, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Situation Wanted**—By good reliable sheet metal man. Experienced in warm air heating; 18 years at the business and would like to locate in one-man shop in small town. Address H. E. Laurence, 3703 Meldrum, Detroit, Mich. P-520

**Situation Wanted**—Licensed plumber, steam fitter, warm air heating, tinsmith, wants position in small town only. Thoroughly practical. Wages to suit. Address Jess Wildrick, Gen. Del., Detroit, Mich. M-520

**Situation Wanted**—Young man with seven years' experience, desires a position as plumber, tinner and sheet metal worker. First class, reliable and steady. Heinrich Albers, 1565 N. Halsted St., Chicago, Ill. C-519

**Situation Wanted**—By experienced young single man in hardware or grocery store. Can do bookkeeping. Address W-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Position Wanted**—By a real furnace man, tinner, roofer, estimator and producer. Wages reasonable. Address D-519, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

## HELP WANTED

**Wanted**—A first class sheet metal worker, capable of doing all kinds of shop work. Must be practical shop man and thoroughly competent to turn out neat and good work. Address D-521, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Wanted**—Layout man and sheet metal workers with hollow metal door and trim experience. Address E-521, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill. BUSINESS OPPS

Would like to get in communication with a good plumber and tinner, one that can do acetylene welding and cutting; also good on repairing auto radiators; \$1.00 per hour. Union man preferred, and one who can drive a Dodge truck. Address Robert E. Hearst, Kane, Pa. K-519

**Wanted**—Combination Plumber and Sheet Metal Worker. Must be neat, clean and sober. State wages wanted in first letter. Address O-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

**Wanted**—Experienced plumber's helper and plumber who can do some tinning preferred but not necessary. State wages and ability in first letter. Address S. W. Laceby, Mackinac Island, Mich. H-519

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## TOOLS AND MACHINES

For Sale—No. 26 Beaver Ratchet Die, with extra set of dies, good as new, at \$10. No. 502 Pexto Grooving Machine at \$15. Heavy Bead- ing Machine, capacity 20 gauge, at \$15. Ad- dress D-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

Wanted—To buy the following used machin- ery: 1—four, five or six foot  $\frac{1}{4}$  in. or  $\frac{1}{2}$  in. capacity brake and 1—four, five or six foot  $\frac{1}{4}$  in. or  $\frac{1}{2}$  in. capacity rolls (power preferred). Address Baker Furnace Co., 2505 Albion St., Toledo, Ohio. G-521

For Sale—One Marshalltown throatless shear, brand new. One set 24-in. forming rolls. One grooving machine. One roof double seamer and two pairs of tongs for same. Will take \$50 for the lot. Shears alone cost \$40. Address B-520, AMERICAN ARTISAN, 139 N. Clark St.

Wanted to Buy—One 4-ft. cornice brake in good working condition and at a bargain. Write me, giving your description and best price. Address S. E. Ethridge, 1103 Denison, Little Rock, Ark. W-519

For Sale—One set of bench machines and stands, also stakes of all kinds. Fair to good condition. Will make very low price on one or all. Address J. R. Hopkins, 820 E. 12th St., Pueblo, Colo. H-521

## TOOLS AND MACHINES

For Sale—Hardware fixtures and tools. Only hardware in town of 700. Address R. H. Lowe, Mt. Vernon, Iowa. F-521

Wanted—Attention, manufacturers: We wish to buy a number of small tinnerns' hand punches, capacity 24 gauge. Address E-520, AMER- ICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

For Sale—Complete set of tinnerns' tools, as good as new. Must be seen to be appreciated. Cheap if taken at once. Address R-519, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

## TOOLS AND MACHINES

Wanted to Buy—Used power pipe threading machine, size  $\frac{1}{4}$ - to 2-in. State price and give name and condition of machine. Address John O. Olson, Humboldt, Iowa. C-520

Wanted—One 30-in. forming machine, one 8- or 10-ft. brake, guaranteed not to be sprung. Address Schwarzkopf Sheet Metal Works, Wau- paca, Wis. F-520

For Sale—Complete welding outfit, suitable for auto body and fender work, cheap. Also body tools. Address Kimball Tin and Radiator Shop, Kimball, Neb. M-519

Wanted—One Beakhorn Stake; name price. Address C. L. Koons, 240 W. High Ave., New Philadelphia, Ohio. O-519

For Sale for \$8.00—1 38x38x28-inch collar ox. copper cast iron register in original crate. Address E. Moyemont, Odell, Ill. P-519

## BOOKS

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## MISCELLANEOUS

For Sale—Correspondence course on sheet metal design and pattern drafting. Address Y-518, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

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## WANTED—FURNACE SALESMAN

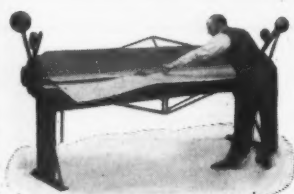
For Iowa. One who knows the fur- nace business; can make plans and estimate jobs in accordance with the Standard Code. Must have a clean, successful record. Give qualifications and past connections for five years in first letter. This is a real proposition for a man who can qualify. Address A-520, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Ill.

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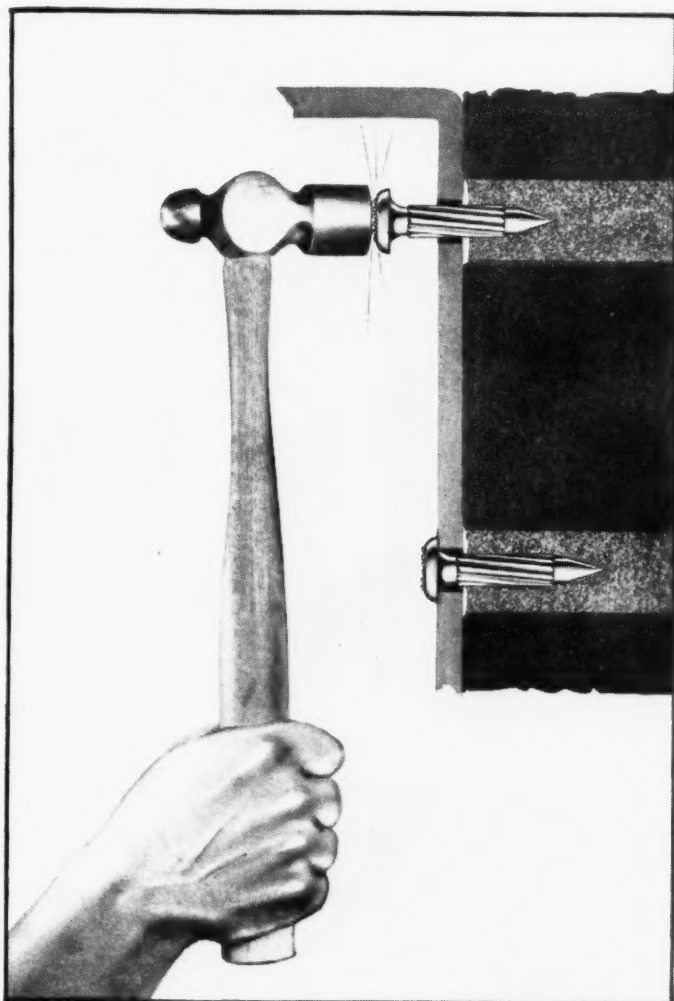
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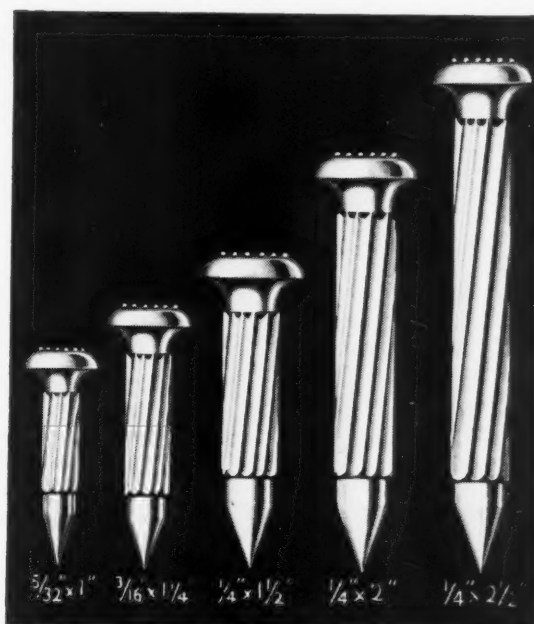
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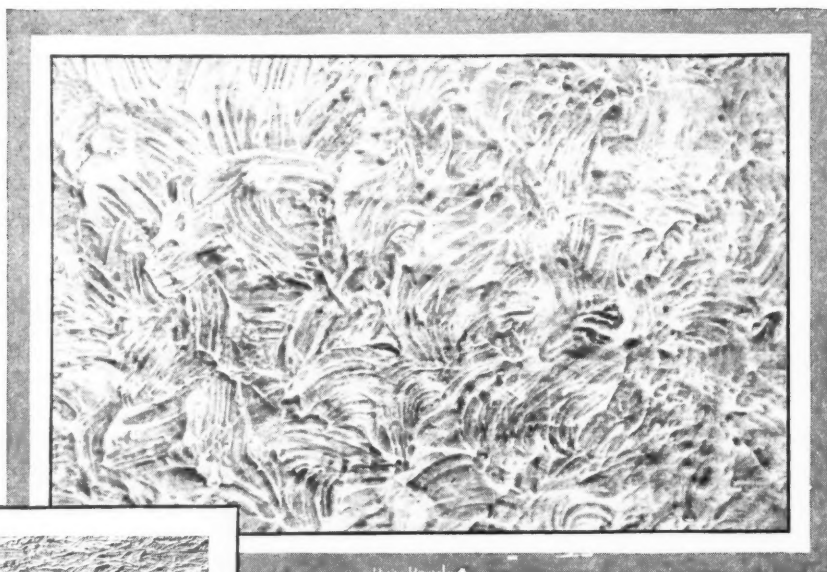
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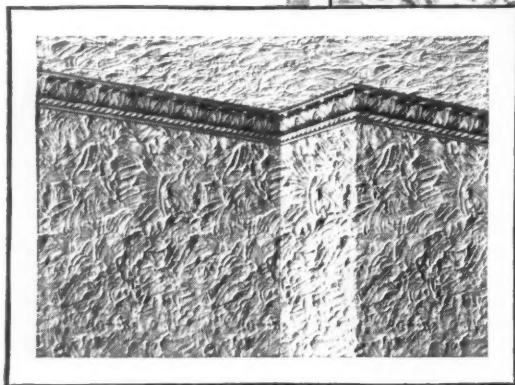
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